NEW

1935-1945: HOW GERMANY GAINED – AND LOST – CONTROL OF THE SKIES

Bringing History to Life

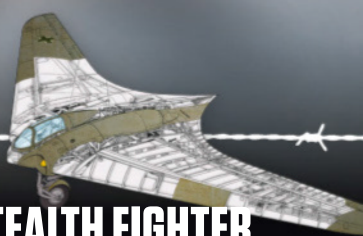
Night-time battles

How German night fighters repelled waves of British bombers

Psychological warfare

Troops were frozen by the Stuka's terrifying howl

THE HISTORY OF THE LUFTWAFFE



STALINGRAD AIRLIFT WAS SUICIDE MISSION

Why attempts to supply the trapped army were doomed

WORLD RECORD FOR KILLS

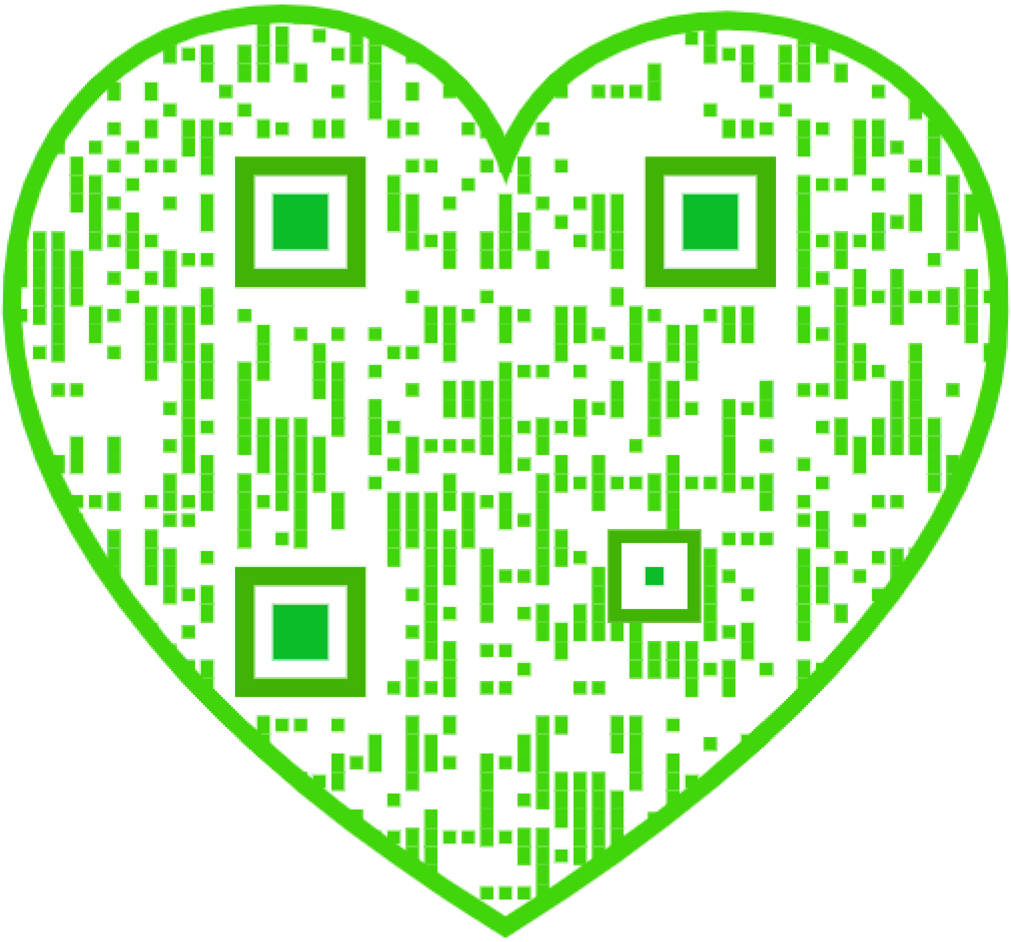
Erich Hartmann took part in 825 air battles

STEALTH FIGHTER WAS A MYTH

The truth behind Hitler's 'invisible' jet plane

£9.99
9 772445 665014 83

★ MESSERSCHMITT BF 110 ★ JUNKERS JU 87 STUKA ★ FOCKE-WULF FW 190 ★



BUNDESARCHIV, BILD 146-1997-026-32A / CC-BY-SA 3.0

Maintenance and armament of a Messerschmitt Bf 109, 1939.

Nazi Germany's dreaded air force

Today, perhaps nothing has become more iconic of World War II's aerial assault than the sound of the Stuka dive bomber's wailing sirens. The mechanical, gradually increasing scream – with the biblical nickname 'Jericho trumpet' – was designed to strike fear into the hearts of those on the ground before the bombs rained down on them.

The siren's psychological effect on the enemy diminished over time, and its use was discontinued in favour of reducing air resistance on the plane.

> "It was designed to strike fear in those on the ground"

But the Luftwaffe, the air force of the German armed forces, was a terrifying machine in its day – even without the fatal sirens. Flying steel formations with rumbling engines, clattering machine guns and autocannons, massive bombing raids and swastika tail fins spread death and destruction on all fronts during the war. In this special magazine, we tell the story of the birth, rise and fall of the Luftwaffe. Read all about the Junkers Ju 87 Stuka, Messerschmitt Bf 109 and other famous aircraft models, and the pilots who flew them.

Enjoy the issue!

CONTENTS

THE HISTORY OF THE LUFTWAFFE

6 **Birth of the Luftwaffe**
16 **Condor Legion**
26 **Hermann Göring**
34 **Messerschmitt Bf 110**
40 **Battle of the Night**
48 **Ju 87 Stuka**
58 **Hans Ullrich Rudel**
62 **Junkers Ju 88**
80 **Stalingrad Airlift**
88 **Focke-Wulf Fw 190**
106 **Hanna Reitsch**
110 **Horten Ho 229**
118 **Luftwaffe's Last Hurrah**

Birth of the Luftwaffe

ESTABLISHED IN SECRET

At the end of World War I, the victors agreed that the German air force should be disbanded. Fighter planes were scrapped and pilots lost their jobs. But the Germans refused to give up. At secret bases in the Soviet Union, the Luftwaffe trained new pilots and tested the aircraft of the future.

"IN 1926, THE FIRST GROUP OF GERMAN FIGHTER PILOTS ARRIVED AT THE SECRET AIRBASE IN LIPETSK, 40 KILOMETRES SOUTH OF MOSCOW"

6

Messerschmitt Bf 110

Adapted to destruction

Germany's most versatile and hard-to-beat plane was only undone by its own faults.

34

WWII's greatest tank destroyer

Two months after his leg was amputated, Hans-Ulrich Rudel flew his Junkers 87 Stuka against the enemy again. He carried out by far the most combat missions of all Germans, despite being twice thrown out of dive-bombing units for lack of flying ability.

FAMOUS PILOTS

HANS-ULRICH RUDEL

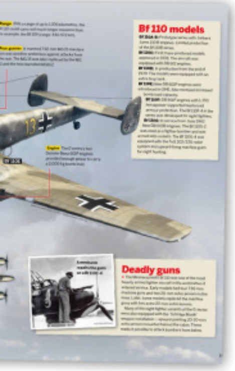
58

Junkers Ju 88

LUFTWAFFES SUPERPLAN

62

Messerschmitt Bf 110 '*Zerstörer*' (Destroyer) over Budapest in January 1944.



40

Fighter plane to stop British bombing offensive

BATTLE OF THE NIGHT

The German night fighter aircraft had only one mission: to stop the British bombing raids on factories and cities. Thanks to both tactical and technical developments, the Nazi night fighters repeatedly outperformed the droves of British bombers.

48

Ju 87 Stuka

FLYING ARTILLERY

When the artillery failed to keep pace with Hitler's panzer divisions, it fell to the Luftwaffe to pave the way. Germany's infamous dive bombers played a crucial role in clearing the ground.

"IT WAS LOVE AT FIRST SIGHT WHEN ERNST UDET SAW JUNKERS' PLANNED DIVE BOMBER, THE JU 87"

88

Focke-Wulf Fw 190

GERMANY'S BATTERING RAM

The Luftwaffe's backbone was the versatile Focke-Wulf Fw 190. The mass-produced fighter aircraft proved highly effective against Allied bombing raids. With its thick armour and powerful autocannons, German aces were able to bring down US four-engine bombers. On the Eastern Front, the Focke-Wulf also enjoyed success as a ground-attack aircraft.

106

She would die for the Führer

Thanks to her courage and skill, Hanna Reitsch became Nazi Germany's most famous test pilot. At the end of the war, she even prepared for a suicide bombing attack on London.

FAMOUS PILOT

"DURING WORLD WAR II, SHE WAS ONE OF THE FEW GERMANS WHO REMAINED STEADFAST IN HER BELIEF IN THE FATHERLAND UNTIL THE VERY END"

BUNDESARCHIV, BILD 101I-669-7340-27 / BLASCHKA / CC-BY-SA 3.0

INTERFOTO/IMAGESELECT

The Arado Ar 68 was one of the first fighter planes designed by Germany when Hitler started to rearm after the Treaty of Versailles. Photo from the 1930s.

Birth of the Luftwaffe

ESTABLISHED IN SECRET

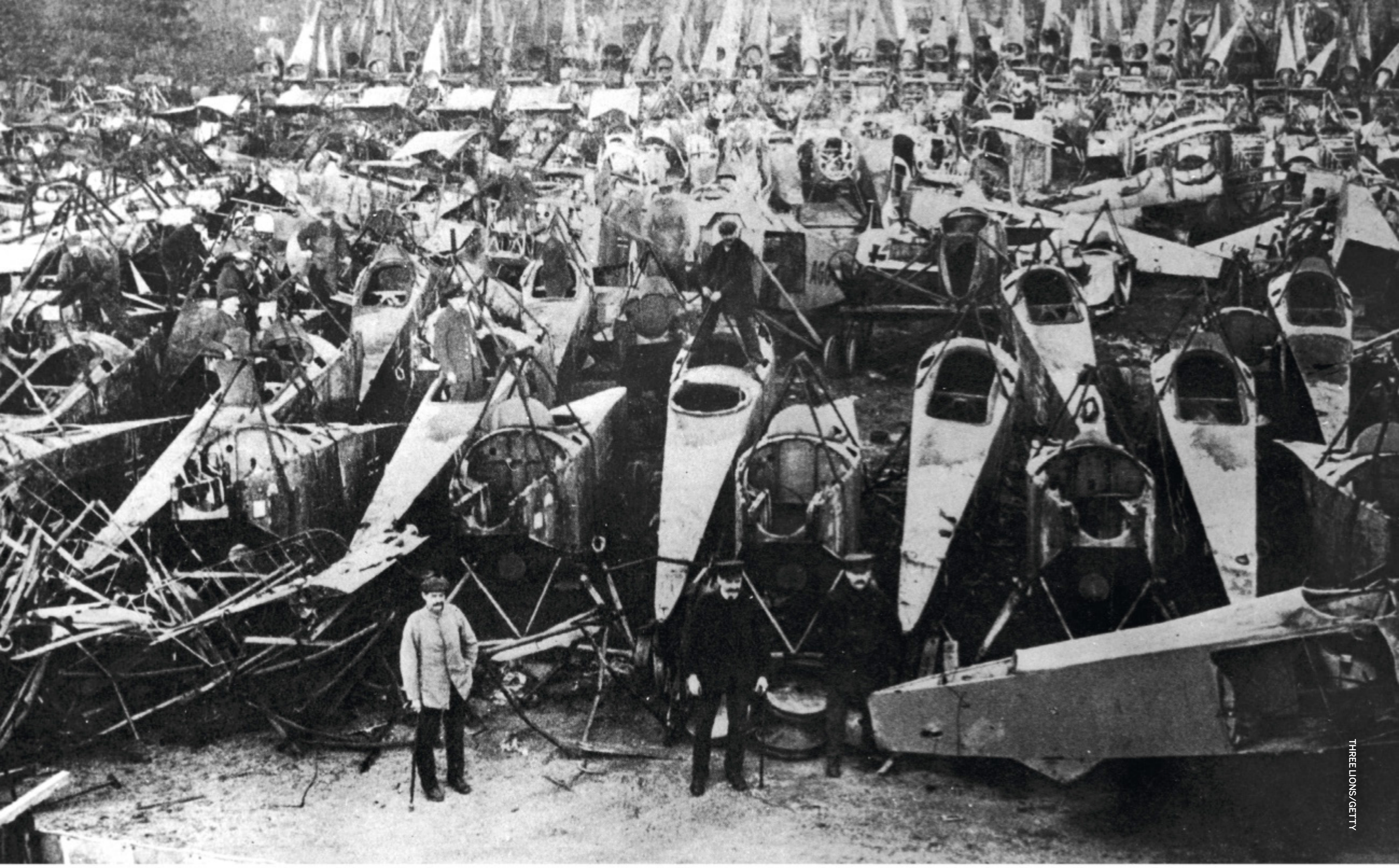
At the end of World War I, the victors agreed that the German air force should be disbanded. Fighter planes were scrapped and pilots lost their jobs. But the Germans refused to give up. At secret bases in the Soviet Union, the Luftwaffe trained new pilots and tested the aircraft of the future.

Text: **ESBEN MØNSTER-KJÆR**

“IN 1926, THE FIRST GROUP OF GERMAN FIGHTER PILOTS ARRIVED AT THE SECRET AIRBASE IN LIPETSK, 40 KILOMETRES SOUTH OF MOSCOW”

Hitler had high expectations of the German air force, led by Göring (centre) and his right-hand man Milch (left).

BILD 146-2005-0191/CC-BY-SA 3.0


THREE LIONS/GETTY

As a result of the Treaty of Versailles, thousands of fully functional German planes were sent to the scrapyard. This photo was taken around 1919.

The German delegation at Versailles was beside itself. The Germans had been expecting the victors of World War I to make extremely tough demands when they arrived at the French palace on 7th May 1919. But the price of surrender turned out to exceed their worst fears.

"The hour has come for the heavy reckoning of accounts," said French Prime Minister Georges Clemenceau to the Germans, huddled behind a table, like the accused in a criminal case. "You have asked us for peace; we are disposed to grant it."

In exchange, the victors wanted astronomical compensation and for Germany to take the blame for the war's devastation. The demands for peace also meant that the German army would be replaced by a force of a mere 100,000 men, with no tanks, submarines or aeroplanes. Europe's greatest nation was to be humiliated; forced out of its place within the circle of major powers.

"We were aghast when we read in documents the demands made upon us, the victorious violence of our enemies," the German foreign minister responded. But the Germans had no choice. They had to sign, without changing a single one of the treaty's 440 articles.

One of the demands of the Treaty of Versailles was to disband the world's most effective air force. With superior strategies, better equipment and more experienced pilots, the Germans had held their own for four years against an enemy with much larger air forces. Now it was gone. The Germans' planes and the accumulated experience would be lost, along with their pride in their achievements.

The Germans had lost World War I and the Treaty of Versailles had to be honoured in order to avoid further fighting. When the German air force was formally disbanded on 8th May 1920, it effectively ceased to exist; all aircraft was destroyed or seized.

BUT THE VICTORS demanded more than just disarmament: Germany had to be prevented from rearming, so the treaty contained demands that would lead to the destruction of its aircraft industry. "During the six months following the coming into force of the present treaty, the manufacture and importation of aircraft, parts of aircraft, engines for aircraft, and parts of engines for aircraft, shall be forbidden in all German territory," said article 201.

The enforced halt in production was intended to drive aircraft factories to bankruptcy – and the plan almost succeeded. The largest German aircraft manufacturer during the war years, Anthony Fokker, responded to the bleak prospect by packing his entire industrial apparatus on to railway trucks and sending it to the Netherlands. Other factories tried to make do with small-scale civilian aeroplanes or started making agricultural machinery instead.

With the air force and the German aviation industry in ruins, Britain, France and the US

Germany won the first air war

★ During World War I, aeroplanes took part in fighting for the very first time and Germany proved to be the master of the air. German planes were not much better than the enemy's, but the pilots gained experience and their equipment – including oxygen masks, so they could fly at higher altitudes – gave them huge advantages.

German pilots were also given parachutes so they could survive crashes and continue their work in the cockpit. The Germans also pioneered attack strategies and air duels, and were always one step ahead of the Allies. At the end of the war, records showed that for every German plane the Allies hit, German pilots had shot down three enemy aircraft.

Göring during World War I.

HISTORIE ARCHIVE

seemed to have achieved their goal. But no sooner had the ink dried on the Treaty of Versailles than German officers began circumventing its clauses. They secretly started to prepare for the day when the army would be free to regain its position among the world's leading forces.

The peace agreement had dictated that the defeated German general staff would cease to exist, along with the air force. But amid all the reorganisation, none of the enemy enforcement officers noticed that German High Command had opened a new office called *Truppenamt,* which translated as 'personnel department'.

Behind this innocent cover name, the army gathered its toughest and most inventive men, who secretly carried on the work of the general staff. Sixty elite officers were hand-picked for the inner circle, including six former pilots. They met with many former colleagues who had officially left the military but were recruited to the department as civilian specialists.

INITIALLY, LIMITED RESOURCES meant that the Truppenamt had to concentrate on building an air defence system that could defend the country against enemy attacks. In the longer term, however, the goal was for Germany to have its own air force once again. This would require trained pilots and a secret aircraft industry that kept up with the latest technological developments. This was not possible in Germany, so the Truppenamt sent a discreet inquiry to another of World War I's losers.

Just like Germany, the Soviet Union was also hard-pressed in the years following 1918. The rest of the world feared the communist regime, which was isolated and surrounded by hostile powers. For the Soviets, an offer even from their old enemy Germany was welcome.

The Red Army and the secret German general staff had common interests and formed an alliance. They agreed that Germany would have access to bases on Soviet territory, where they could test new munitions and train personnel. In return, the Soviet Union would monitor its guests during exercises and test the German planes.

LIPETSK OBLAST CITY ARCHIVES

German pilots travelling to Lipetsk near Moscow dressed up as ordinary tourists during the German-Soviet exchange.

> "IN THE LONGER TERM, HOWEVER, THE GOAL WAS FOR GERMANY TO HAVE ITS OWN AIR FORCE ONCE AGAIN"

IN 1926, THE first set of German fighter pilots arrived at the secret airbase in Lipetsk, 40 kilometres south of Moscow. There, far from prying eyes, 300 German pilots were able to test new aircraft, try out attack techniques and practise aerial reconnaissance. Numbers were limited and all students were selected for their cockpit skills and leadership potential. When they returned to Germany, they would be able to instruct the next group of pilots and develop new tactics.

Many of the students from the Lipetsk pilot school went on to rise to the highest ranks in the ►

HISTORIE ARCHIVE

Walter Wever was the Luftwaffe's chief of staff. He improved cooperation between air and ground forces.

Luftwaffe. The first group was made up of veterans of World War I, followed by young men chosen to become the backbone of the future air force. They had to learn how to fly, and in order to recruit enough candidates, the German military leadership once again showed that it could circumvent the Treaty of Versailles. Healthy young Germans, especially officers, were encouraged to join the glider clubs that were growing in number in Germany in the 1920s. In these engine-less craft, basic flying skills could be taught inexpensively and easily in a country whose aviation industry was still on its knees.

UPON ARRIVAL IN Lipetsk, the young pilots could sit in a real German fighter plane for the first time. However, training in the untested planes was not without danger and several pilots died during the exercises. Their bodies were sent back to Germany in boxes labelled 'machine parts'.

One of the German manufacturers who secretly developed new aircraft was Hugo Junkers. His factory in Germany produced civilian aeroplanes, but he started manufacturing fighter planes with the help of various foreign shell companies, first in the Soviet Union and from 1925 in Sweden under the name AB Flygindustri. Most of the parts were produced at the main factory in Germany and then Junker shipped them by boat to Sweden, where they were assembled and exported to air forces in South America, Asia and Europe.

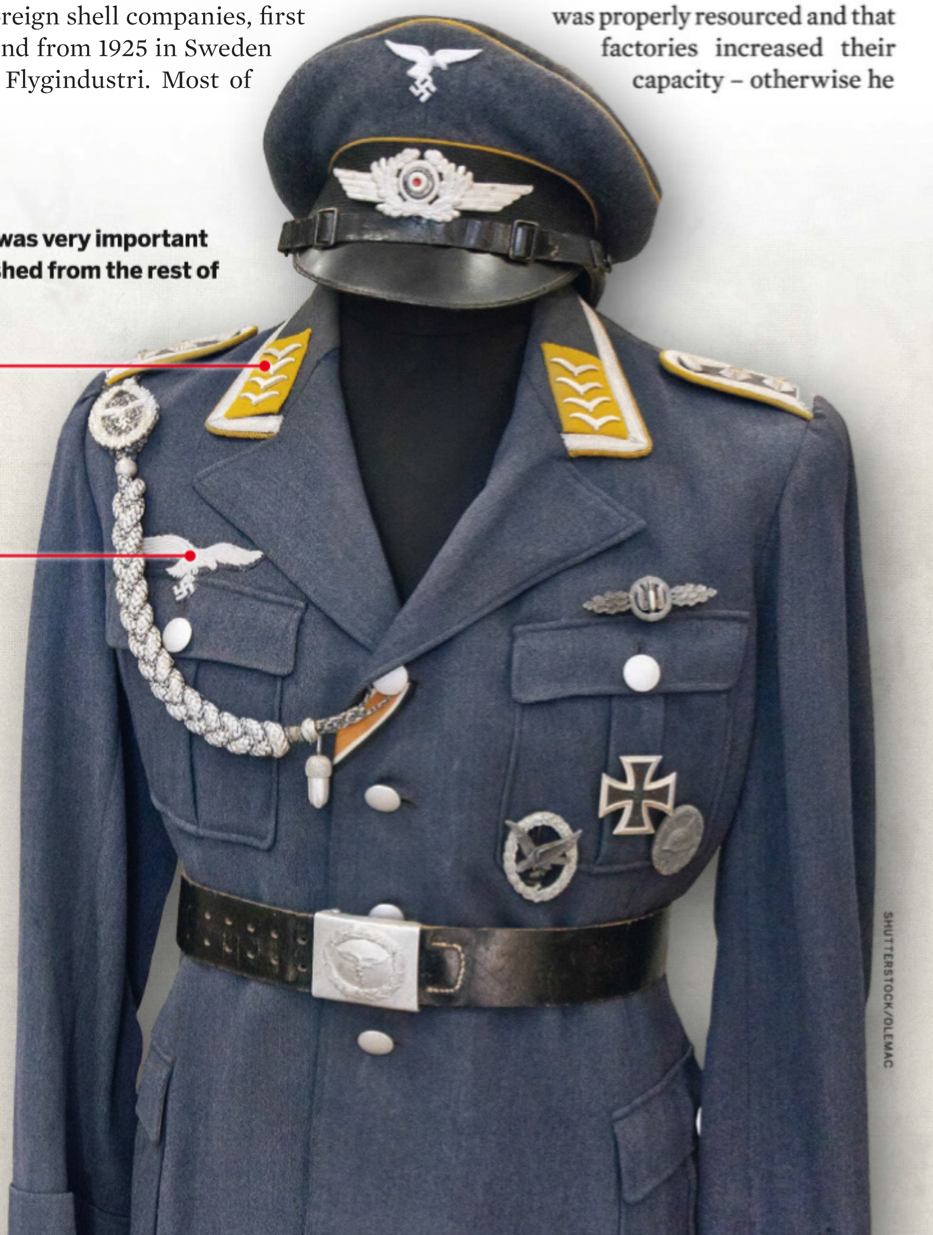
IN 1932, THE Truppenamt was ready to re-establish the German air force. New attack strategies had been developed and plans for a force of 1,000 aircraft comprising five different models were waiting in the filing cabinet. The factories were eager to get on with the rearmament. All the generals needed was a political leader who would break the Treaty of Versailles and consign the limitations of their defeat to history. That leader arrived with Adolf Hitler's rise to power on 30th January 1933.

When Hitler became German chancellor, it soon became clear that aircraft were high on his list of priorities. A new aviation ministry was formed, with Hermann Göring as its head. A highly decorated pilot from World War I, he was second in the Nazi Party hierarchy, right after Hitler.

Göring proved to be the perfect head of Germany's new air force. By virtue of his political position, he was able to ensure that it was properly resourced and that factories increased their capacity – otherwise he

Special status

Hermann Göring loved uniforms, and it was very important to him that the Luftwaffe was distinguished from the rest of Nazi Germany's armed forces.


SHUTTERSTOCK/OLEMAC

Rank designation Followed the standard army arrangement on the shoulders, but the Luftwaffe had its own system on the collar, with V-shaped wings and oak leaves in various combinations.

Eagle German soldiers wore the national coat of arms (an eagle with a swastika in its talons) on their helmet and right breast. But unlike the army and navy's stylised eagle, the Luftwaffe's was lifelike and flying.

Ring This was not an official mark of rank. Pilots bought it to emphasise their special status when appearing in civilian life.

HISTORY ARCHIVE

stayed out of the way. Göring rarely sat at his desk in his spacious ministerial office in Berlin, preferring parades and socialising. His absence was to the advantage of his staff as it had been more than ten years since Göring had last sat in a cockpit and he knew nothing about the development of military aviation since World War I.

This gave the experts peace of mind. However, they could not immediately start any obvious rearmament because Hitler wanted to tighten his grip on Germany before challenging Britain and France by rejecting the treaty altogether. However, preparations gathered pace and many new members were recruited to the country's flying clubs. One of them was 22-year-old Günther Scholz. He began flying in 1933 and decided to become a pilot in the air force that everyone knew would emerge.

By now, secret pilot schools had opened in Germany, and in 1934 Scholz was discovered at a naval academy. The young hopeful was lucky enough to get one of the few places reserved for the very best. There was a strong sense of community in this select fraternity. The elite culture led to a generation of extremely talented pilots, but it would also prove to be a problem in the long run. When the war began, the German pilots were completely unprepared to train the many new recruits that were required in a short space of time.

THE LUFTWAFFE WAS finally officially formed in March 1935 when Hitler rejected all the military limitation clauses in the Treaty of Versailles. Neither the British, French nor Americans resisted. Germany's rearmament could be ramped up without the need for secrecy. From now on, the principle was that if anything in the German military could be flown, it belonged to Hermann Göring.

Germany's newly established air force needed a commander-in-chief and General Walther Wever was selected. It was his job to define the Luftwaffe's role. Wever believed that the key to victory was close cooperation with the army. German bombers would be used to destroy enemy bases and block transport routes, making it impossible for the enemy to move its troops:

"The air force will enable our army to achieve [an annihilating defeat] by keeping enemy reserves, even reserve armies, away from the battlefield," Wever told a group of Luftwaffe officers. He also thought that enemy factories were obvious targets, but no one was convinced that air forces could win wars on their own simply by terrorising large cities. However, some military theorists of the time did believe

Article continues on page 14 ►

The Junkers Ju 87 Stuka dive bomber was successful in Spain.

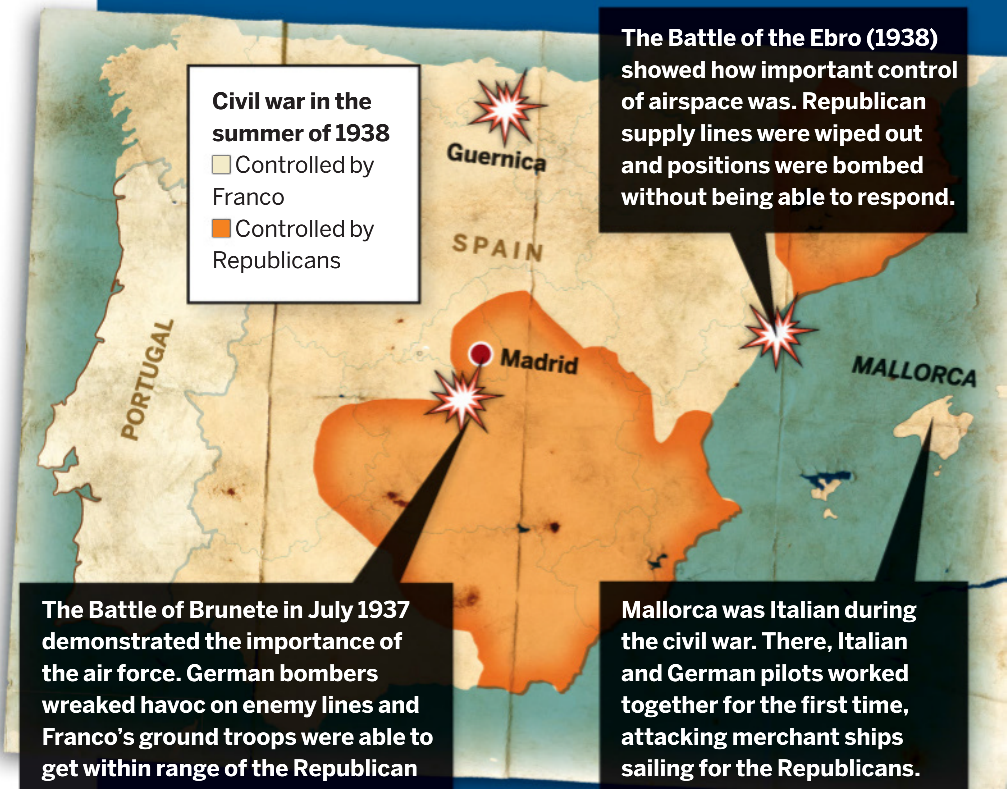
BUNDESARCHIV, BILD 183-J16050/ KARNATH/CC-BY-SA 3.0

Luftwaffe tested new tactics in Spain

★ When the Spanish Civil War broke out in 1936, Hitler decided to support the fascist General Franco. But the purpose of the Condor Legion was also to gain experience for the coming world war.

Many of the newly developed German planes proved to be poor in combat and were soon replaced by improved models. However, the Stuka exceeded all expectations in terms of accuracy, and for three years, fighting raged between Franco's fascists and the army assembled by Spain's socialist government.

On 1st April 1939, Franco seized power in Madrid and ended the war. His victory would have been impossible without the Condor Legion, which dropped almost 17,000 tonnes of bombs on Spain. Five months later, the Luftwaffe attacked Poland.



Civil war in the summer of 1938

☐ Controlled by Franco

🟧 Controlled by Republicans

The Battle of the Ebro (1938) showed how important control of airspace was. Republican supply lines were wiped out and positions were bombed without being able to respond.

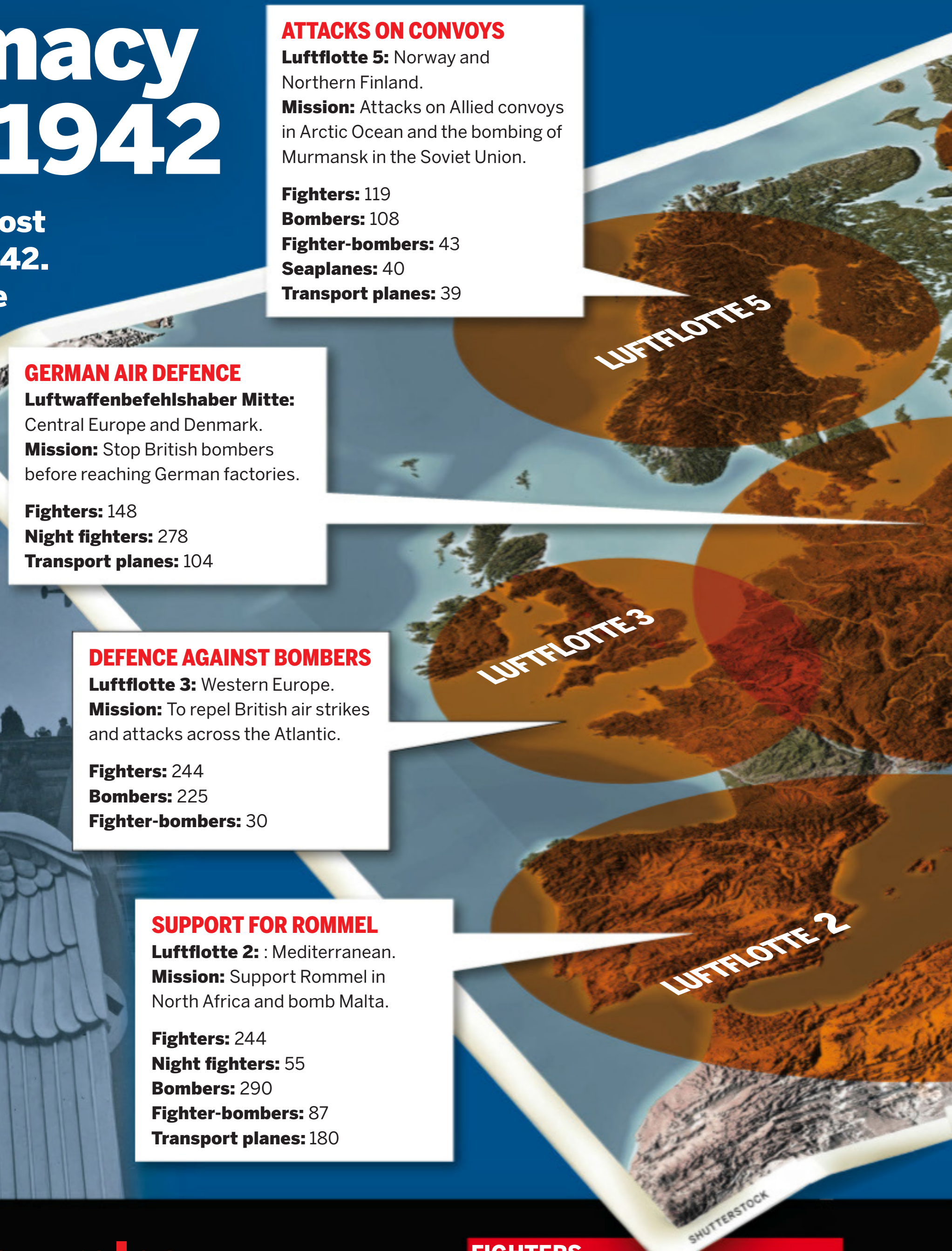
The Battle of Brunete in July 1937 demonstrated the importance of the air force. German bombers wreaked havoc on enemy lines and Franco's ground troops were able to get within range of the Republican army and end the battle.

Mallorca was Italian during the civil war. There, Italian and German pilots worked together for the first time, attacking merchant ships sailing for the Republicans.

Air supremacy in Europe 1942

Hitler's Germany controlled most of Europe in the summer of 1942. From the Norway's North Cape to the Sahara, the airspace was divided into sections where the Luftwaffe constantly watched for enemy troops, ships and aircraft.

RIJKSMUSEUM



SHUTTERSTOCK

ATTACKS ON CONVOYS

Luftflotte 5: Norway and Northern Finland.
Mission: Attacks on Allied convoys in Arctic Ocean and the bombing of Murmansk in the Soviet Union.

Fighters: 119
Bombers: 108
Fighter-bombers: 43
Seaplanes: 40
Transport planes: 39

GERMAN AIR DEFENCE

Luftwaffenbefehlshaber Mitte: Central Europe and Denmark.
Mission: Stop British bombers before reaching German factories.

Fighters: 148
Night fighters: 278
Transport planes: 104

DEFENCE AGAINST BOMBERS

Luftflotte 3: Western Europe.
Mission: To repel British air strikes and attacks across the Atlantic.

Fighters: 244
Bombers: 225
Fighter-bombers: 30

SUPPORT FOR ROMMEL

Luftflotte 2: : Mediterranean.
Mission: Support Rommel in North Africa and bomb Malta.

Fighters: 244
Night fighters: 55
Bombers: 290
Fighter-bombers: 87
Transport planes: 180

Old planes given new roles

The Luftwaffe constantly developed new aircraft, but rarely phased out old ones. For example, the Junkers Ju 52 was used as a passenger plane in 1930, as a bomber from 1935 and later as a transport plane.

Junkers Ju 52 'Tante Ju' in one of its many roles: transport plane.

HISTORIE ARCHIVE

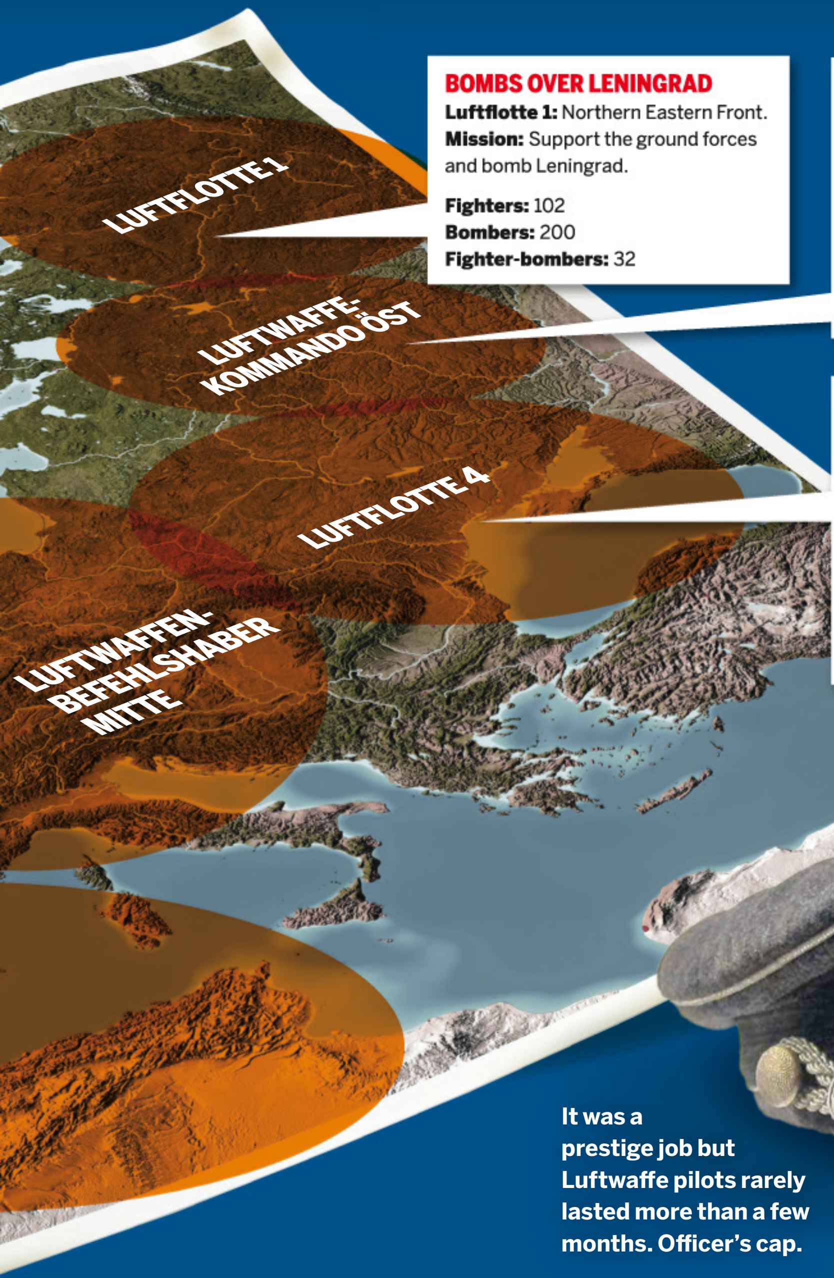
FIGHTERS

Name	In service	Number
Heinkel He 51	1935	700
Arado Ar 68	1936	500
Messerschmitt Bf 109	1937	35,000
Focke-Wulf Fw 190	1941	14,000
Messerschmitt Me 262	1944	1,400

Below: The Bf 109 was one of the few aircraft produced throughout the war.

Messerschmitt Bf 109

HISTORIE ARCHIVE



BOMBS OVER LENINGRAD

Luftflotte 1: Northern Eastern Front.
Mission: Support the ground forces and bomb Leningrad.

Fighters: 102
Bombers: 200
Fighter-bombers: 32

REINFORCEMENT OF THE EASTERN FRONT

Luftwaffekommando Öst: Eastern Front.
Mission: New force. To fill the gap between Luftflottes 1 and 4.

Fighters: 246
Bombers: 179
Transport planes: 104

HELP FOR STALINGRAD

Luftflotte 4: South Eastern Front.
Mission: Support the ground forces' offensive towards the Caucasus and Stalingrad.

Fighters: 303
Night fighters: 70
Bombers: 450
Fighter-bombers: 304
Transport planes: 336

BUNDESARCHIV, BILD 146-1984-112-13/CONRAD/CC-BY-SA 3.0

Ernst Udet, head of development for the Luftwaffe, wanted to use more dive bombers.

WARHATS.COM

It was a prestige job but Luftwaffe pilots rarely lasted more than a few months. Officer's cap.

NIGHT FIGHTERS

Name	In service	Number
Messerschmitt Bf 110	1937	6,200
Messerschmitt Me 410	1943	1,200
Heinkel He 219 Uhu	1943	300

Below: The Bf 110 was developed for long-range fighting but had no chance against Britain's Spitfire, so was given radar and hunted bombers at night.

Messerschmitt Bf 110

HISTORIE ARCHIVE

FIGHTER-BOMBERS

Name	In service	Number
Henschel Hs 123	1936	250
Junkers Ju 87 Stuka	1936	6,000
Messerschmitt Bf 109 Jabo	1940	350
Henschel Hs 129	1942	850
Focke-Wulf 190 Jabo	1942	6,000

Below: The Hs 123 was the Luftwaffe's precision bomber until Stuka took over.

Henschel Hs 123

HISTORIE ARCHIVE

BOMBERS

Name	In service	Number
Dornier Do 11	1932	370
Heinkel He 111	1935	7,300
Dornier Do 17	1937	2,100
Junkers Ju 88	1939	15,200
Heinkel He 177 Greif	1942	1,200

Below: Ju 88 was supposed to be a blitz bomber that could escape the enemy.

Junkers Ju 88

BUNDESARCHIV, BILD 101I-417-1766-03A/ ELLERBROCK/CC-BY-SA 3.0

Three important victories for air force

The Third Reich's air force brought warfare into a new era. Operations that had previously been impossible were now achievable thanks to help from above.

Bombers helped ground troops in Norway

1 Norway had always stood a good chance if an enemy attacked the country. The mountainous landscape left no room for manoeuvre for advancing troops, who could be easily defeated by small forces. However, aeroplanes changed the rules. As Germany pushed through Norway in April and May 1940, the Luftwaffe bombed Norwegian defence positions. With this support, the German ground troops were able to achieve victory in two months.

German paratroopers in Crete in 1941.

BUNDESARCHIV, BILD 141-0864/CC-BY-SA 3.0

14,000 paratroopers took Crete

2 German forces had captured Greece in spring 1941, but out in the Mediterranean, Britain still controlled Crete. British warships blocked the path of the German invasion fleet, so Germany used a brand-new weapon: paratroopers. It dropped 14,000 men on the island. Despite being widely scattered and suffering heavy losses, they managed to capture one of the island's airbases, where the Germans could land reinforcements. The first airborne invasion in history was a success.

Fighters struck US bombing raid

3 On 17th August 1943, the US Air Force launched its most ambitious bombing raid on Germany to date; 376 heavy bombers were to destroy the Messerschmitt factories in Regensburg and a ball-bearing factory in Schweinfurt. Halfway to the target, the bombers' fighter escorts turned back as they were running out of fuel. Then 400 German fighters struck. Over 60 bombers were lost. As a consequence, the US cancelled all daylight bombing missions until it had new fighters with longer ranges.

that such destruction would quickly force the enemy to surrender.

Wever's words were an accurate description of how the Luftwaffe would operate throughout World War II. Rather than having a completely independent role, as the British RAF or the US Air Force did, he wanted to work with the army. The Luftwaffe's course was set and the foundations for great triumphs, as well as bitter failures, were laid. As early as 1936, the new German air force was able to carry out its first mission.

IN SPAIN, FASCIST forces rebelled against the country's left-wing government and a three-year civil war broke out. Hitler decided to intervene and the Luftwaffe would lead the fighting. One of the pilots involved was Günther Scholz. As an officer, Scholz worked in Spain for a year, carrying out bombing raids, flying escort missions and fighting aerial duels.

The missions, sometimes several in one day, demanded the utmost from pilots and aircraft, and the low-flying operations aimed at targets at the front were extremely dangerous, often resulting in lots of flying lead. But before the German pilots eased off, they had usually got close enough to their targets to be able to see them on the ground. This tactic became one of the Luftwaffe's strongest cards and most widely used tactics.

During the Spanish Civil War, however, German planes carried out an attack that tarnished Germany's reputation abroad: on 26th April 1937, German bombers laid waste to the town of Guernica and the international press left no doubt that the Nazis had deliberately used terrorist bombing as a strategy.

The circumstances of the attack were never made clear but the use of carpet bombing to break the enemy's will to fight was not one of Wever's principles. The attack on Guernica was probably at Franco's behest and the German pilots of the Condor Legion delivered the desired result without worrying about civilian casualties.

The fighting in Spain provided an opportunity to test tactics and equipment, and to iron out serious problems before the pending showdown with Germany's enemies. The Heinkel He 51 fighter plane, considered the pride of the Luftwaffe, turned out to be a piece of flying junk. It was so inferior in combat to the enemy's Soviet-made Polikarpov I-15s and I-16s that the German pilots had to take refuge in the midst of the bomber formations they were supposed to be protecting. Work on the development of the much more efficient Messerschmitt Bf 109 was accelerated.

The civil war also demonstrated that precision bombing, particularly using the newly developed

A Dornier Do 17 bomber in the Condor Legion photographed in 1939 during the Spanish Civil War.

SCHERL/SUEDDEUTSCHE ZEITUNG PHOTO/RITZAU SCANPIX

Junkers Ju 87 Stuka, produced much better results than anyone had dared to hope for. The tests confirmed German theorists' belief that enemy ground forces were the most important targets and that this was the future of the battlefield.

THE SPANISH CIVIL War ended in the spring of 1939 and World War II broke out in late summer of the same year. The Luftwaffe was now perfectly equipped to fight the kind of air war for which it had been intended. The Messerschmitt Bf 109 was better than almost every opponent the fighter would face in the first year of the war. Stuka planes and light bombers pulverised the targets that blocked the path of the German panzer divisions. Mobile workshops followed close behind the army's main units so that aircraft could be quickly repaired and sent back into the air.

No enemy could keep up with the Germans' pace as they advanced through Poland, Scandinavia and Western Europe. However, Germany's flying armada was defeated in the Battle of Britain because Göring had promised completely unrealistic results. But this failure was followed by the Luftwaffe's greatest triumph to date when Hitler sent his forces against the Soviet Union in 1941. Before dawn on 22nd June, Günther Scholz and thousands of other pilots were in the air waiting for the signal to cross the border and attack the Soviets.

He looked southwards and could see flares shooting up into the sky along the border, almost like fireworks. It was a sight he would never forget.

On the first day of the offensive alone, 322 enemy aircraft were shot down and the Luftwaffe destroyed a further 1,500 on the ground, while German losses numbered no more than 35 planes. The figures sounded so exaggerated that Göring refused to believe them. Only when the wreckage of the Soviet airbases was properly assessed could the reports be confirmed. Hitler believed that the Red Army's collapse was imminent and in September he ordered a reduction in aircraft production.

"IT WAS NOW PERFECTLY EQUIPPED TO FIGHT THE KIND OF AIR WAR FOR WHICH IT HAD BEEN INTENDED"

Production was already lagging behind the losses the Luftwaffe had suffered since the start of the war. But Nazi Germany was convinced that victory was near and it could then rebuild the force. In 1940, the Brits built three aircraft for every two German ones.

The campaign against Stalin stalled just outside Moscow, and with winter's biting cold came the Soviet counter-offensives. The blitz had failed and Germany was drawn into a war of attrition for which neither the army nor the Luftwaffe was prepared.

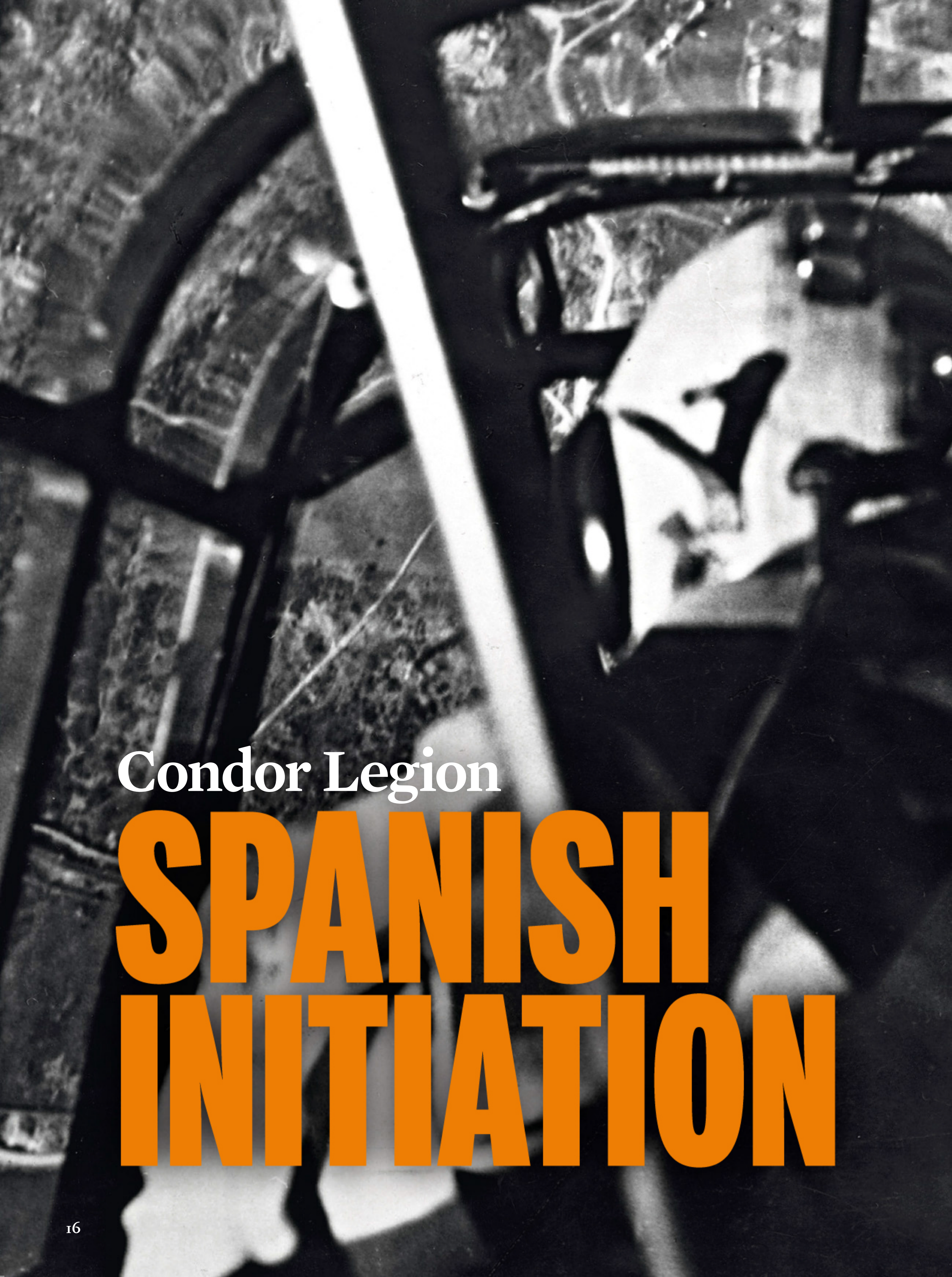
This setback prompted Hermann Göring to take greater responsibility for the Luftwaffe. But then the situation became even more difficult. Göring made unrealistic promises and resorted to desperate measures when problems materialised. Even before the end of the war in 1945, the Luftwaffe had ceased to function as an operational air force. Its remnants were grounded, without fuel, pilots or spare parts. Meanwhile, German cities were left in ruins by Allied bombers that had met no resistance in the air.

FOR GÜNTHER SCHOLZ, the war ended in Stavanger, where he had led the German air defence in Norway. The last time he flew in Luftwaffe uniform was as a prisoner of war and with British fuel in the tank. The Brits wanted the German planes to return to Germany and Scholz piloted a machine full of wounded soldiers and Norwegian women pregnant with German men's children. ■

Esben Mønster-Kjær is a military history writer.

HISTORIE ARCHIVE

Günther Scholz died in 2014 as the last surviving pilot of the Condor Legion.



Condor Legion

SPANISH INITIATION

ULLSTEIN BILD DTL./GETTY

View from a German Junkers Ju 87 Stuka dive bomber during an attack on a Spanish town in 1938.

During the Spanish Civil War, the Luftwaffe was able to develop its tactics using dive bombers and fighters. While Franco received strong support, the German Condor Legion tested its new equipment in action. The Ju 87 Stuka and Messerschmitt Bf 109, for example, received a baptism of fire ahead of the coming world war.

Text: **NICLAS SENNERTEG**

SCHERL/SUEDDEUTSCHE ZEITUNG PHOTO/RITZAU SCANPIX

German soldiers prepare a 20-mm Flak 30 anti-aircraft gun for firing.

On 28th April 1937, news broke that the small Basque town of Guernica had been destroyed by German bombers flying on behalf of General Franco. Two days later, Spanish artist Pablo Picasso began painting frantically in Paris. By mid-June, the piece was completed and then shown at Paris's International Exposition of Art and Technology, where it was a sensation. *Guernica* is an extremely powerful anti-war symbol and one of the most famous paintings of the 20th century.

Less well known is the military force that gave rise to the horrors depicted by Picasso – the German Condor Legion. It contributed significantly to General Franco's victory in the Spanish Civil War and the establishment of the fascist dictatorship that lasted until 1975. Ever since Hitler took power in 1933, he had been determined to rebuild Germany after its defeat in World War I. A strong army was a prerequisite for Germany's expansion into the East that Hitler had argued for in *Mein Kampf,* but the Treaty of Versailles only allowed for a small force of 100,000 men. Initially, rearmament was carried out in secrecy so as not to risk intervention by the other major powers while Germany was still militarily weak.

BY EARLY 1935, however, the confidence of the Nazi regime had grown, and Hitler announced that Germany had reintroduced conscription, was planning to expand its army and had begun building a new air force under the leadership of the minister of aviation, Hermann Göring. Both measures were in flagrant violation of the terms of the Treaty of Versailles, but the Allied powers did not take the growing threat from Germany seriously and failed to respond decisively.

The following year, 1936, was a key period for Nazi foreign policy, paving the way for the aggressive phase in which Hitler's ideological goals would be realised. In March, German troops occupied the demilitarised Rhineland, giving the German armed forces full military control over the entire territory. October saw the launch of the Four Year Plan under Göring, a Soviet-style programme of production to make Germany economically and militarily ready for war. The same year saw the organisation of the Summer Olympics in Berlin, which was Hitler's biggest and most successful charm offensive to the outside world.

MEANWHILE, IN ANOTHER corner of Europe, unrest and gunfire grew. For years, tensions between left and right had been building in Spain, where the monarchy had been replaced in 1931 by a republic governed by a coalition of left and centrist parties. Among the conservative right, however, there was growing dissatisfaction with the new government's changes. Landowners and aristocrats felt threatened by land reforms and other measures designed to alleviate the plight of the poor, the army resented military cuts, while the clergy perceived the government as anti-Catholic.

After a new coalition dominated by socialists, left-wing liberals and communists won the 1936 elections, a group of army generals launched an open revolt against the government. The coup failed and turned into a protracted civil war that would not end until spring 1939, when General Francisco Franco installed himself as fascist dictator in Madrid.

Germany's involvement in the civil war began as early as the end of July 1936, when General Franco requested Hitler's help in transporting his army of 10,000 soldiers from Spanish Morocco to Spain to rescue the beleaguered coup plotters there.

Hitler immediately agreed and sent 20 military transport planes that, in cooperation with Italian aircraft, carried out the first airlift in history. It was this act that saved the initially hard-pressed rebels from defeat and transformed a failing coup attempt into a full-blown civil war. This was the first time since World War I that a German military unit had operated outside Germany, foreshadowing the aggressive German foreign policy that was soon to be launched.

THE SPANISH CIVIL War was a golden opportunity for the German military leadership to test and train its air and ground forces under modern warfare conditions. Therefore, Hitler's Germany decided to provide large-scale military assistance to the Nationalist side – in the form of war equipment, combat units and military specialists.

“NO REPORTING ON THE LEGION WAS ALLOWED IN THE GERMAN MEDIA”

During the autumn, further contingents of mainly pilots, ground staff, signalling experts and armoured officers arrived from Germany under the guise of tourists.

In November, the 4,500-strong Condor Legion, named after the world's largest flying bird, was formed. Its first commander was Major General Hugo Sperrle, while the Red Baron's cousin, Lieutenant Colonel Wolfram von Richthofen, was appointed chief of staff.

The core of the legion was composed of air units, but it also included some army and navy forces. Some were genuine volunteers who had been secretly recruited, but most were probably seconded from their units in Germany. The Wehrmacht introduced a rotation system whereby selected officers and soldiers would serve for a period of time in Spain to gain combat experience. In total, around 20,000 men are believed to have served in the Condor Legion, which had an average strength of 5,000 during the civil war.

NOT WANTING TO be quite as conspicuous as a condor, this German force kept a relatively low ►

BUNDESARCHIV/101I-452-0985-36

Wolfram von Richthofen, chief of staff of the Condor Legion.

AKG-IMAGES/RITZAU SCANPIX

profile so as not to cause international complications. Germany did not officially recognise its involvement in the civil war and members of the legion wore uniforms that were neither Spanish nor German. No reporting on the legion was allowed in the German media either.

The Condor Legion became the main air support for the fascist side throughout the Spanish Civil War, but its beginnings were modest. Initially, the legion had just 50 three-engine Junkers Ju 52s, which were used as both bombers and transport planes, and some 50 fighters, the majority of which were outdated Heinkel He 51s, which proved technically inferior to the US and Soviet fighters used by the government.

> “THE LEGION BECAME THE WEHRMACHT’S DE FACTO MILITARY TESTING GROUND”

FOR THE FIRST six or seven months of the war, the legion’s performance was mediocre at best, due in part to a lack of communication and poor precision when it came to air combat and bombing. The greatest success was the air strikes against fortified defences on the northern front. These were carried out by He 51 biplanes, which were used as fighter-bombers. This particular squadron (a division of 12 aircraft) was led by Lieutenant Adolf Galland, who later became one of Germany’s most famous flying aces.

During these attacks, each aircraft carried four ten-kilogram bombs and basic incendiary devices filled with petrol, which were dropped from a height of 160-170 metres without the aid of bomb sights. The aircraft flew towards the target in a tight V formation and the bombs were dropped when the leader signalled from his open cockpit. Despite the primitive methods, remarkable successes were achieved that sowed the seeds of the air and ground force cooperation that characterised the blitzkrieg in Poland and France in 1939-1940. These tactics were developed in the following years by the legion’s chief of staff, von Richthofen, including directing air units by radio from a control centre on the ground.

In the summer of 1937, the Condor Legion took on a new form with the arrival of the first versions

A Heinkel He 111 being loaded with bombs. The plane was licensed after the war in Spain and remained in service there until 1973.

BUNDESARCHIV/183-C0214-0007-013

of the Messerschmitt Bf 109 fighter and the Heinkel He 111 and Dornier Do 17 medium bombers. A few months later, the Junkers Ju 87 Stuka dive bomber also appeared. These new types of aircraft helped the legion gain the upper hand over the government air forces and ensured the fascist victory.

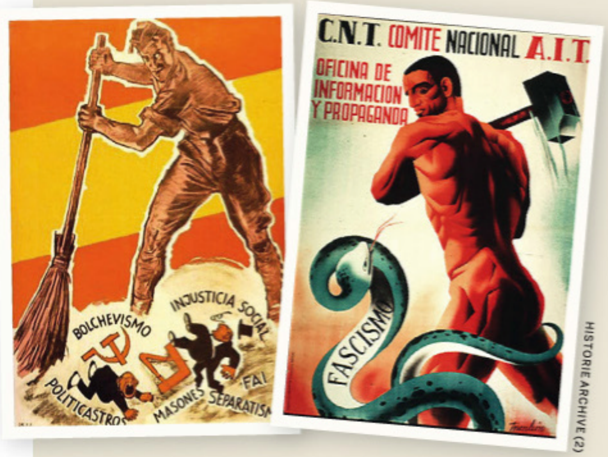
THE LEGION BECAME the Wehrmacht's de facto military testing ground, and substandard equipment was modified in the field. The war also taught the Germans important tactical lessons. The new twin-engine bombers proved able to fly faster than the fighters the enemy sent up to stop them, and the bombers suffered few losses, even when without a fighter escort. This gave Luftwaffe bombers a false sense of security that would last until the Battle of Britain in 1940-41, when the encounter with the RAF was a rude awakening.

Von Richthofen, the legion's chief of staff and last commander, concluded that single- and twin-engine bombers with dive-bombing capabilities could increase the offensive capability of ground troops. His suggestion was that the Luftwaffe should prioritise direct air support for army units. However, this was rejected by the Luftwaffe's top brass. In its operational doctrine established in 1935, the Luftwaffe prioritised bombing attacks on targets such as fuel depots, railways and important transport hubs. Support of ground units was to be provided only at crucial points, and only in exceptional cases would air units directly attack inside the combat zone.

WHILE GERMAN BOMBER crews in Spain believed they were invulnerable, fighter aircraft also developed tactics that made them superior to every other country's fighter formations. These were devised by one of the Luftwaffe's best fighter pilots, then Lieutenant Werner Mölders. He abandoned the older rigid three-aircraft formations and introduced the *rotte* (two aircraft), in which the first plane could concentrate on attacking, while the second plane's main task was to protect the first from attacks from the rear, where the single-seat fighters were most vulnerable. The rottes usually appeared in twos, in a *schwarm* (swarm), enabling them to manoeuvre quickly and smoothly with less risk of collision.

Moreover, the aircraft in a schwarm often flew at different altitudes to optimise their defence and visibility. Until the beginning of the Battle of Britain, this tactic gave German fighter pilots an advantage, before other countries' pilots began to copy these looser formations.

THE SPANISH CIVIL War also taught the Luftwaffe the value of mobile units and effective ▶



HISTORIE ARCHIVE (2)

Propaganda posters during the Spanish Civil War – on the left the Nationalists, on the right the syndicalists, CNT, who fought on the Republican side.

Spanish army was split

★ When civil war broke out in 1936, the soldiers and officers of the 120,000-plus-strong Spanish army were quickly forced to choose sides. About half of the soldiers remained loyal to the Republic, while the majority of the officers joined the rebellion, as did the 70,000-plus paramilitary police forces.

Initially, the Republicans were numerically superior, but the balance of power shifted after the Nationalists, with German help, managed to bring large numbers of the colonial army home from Africa. In the summer of 1936, the Nationalists were believed to have had a total of 160,000 men, while the government side had roughly the same number. Two years later, the ratio was 600,000 Nationalists to 450,000 Republicans after both sides introduced conscription.

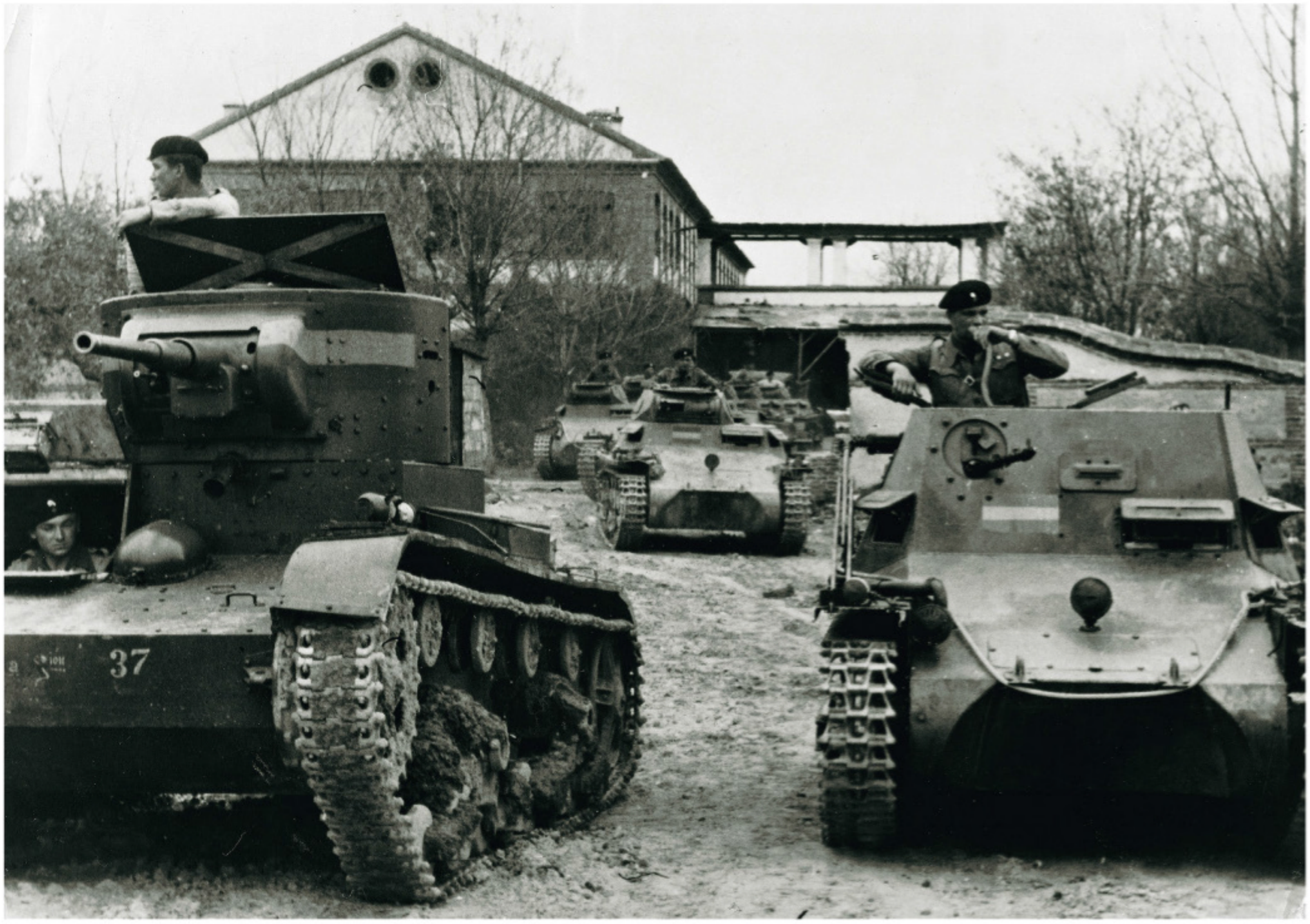
Different political camps also set up their own units and militias, including anarchist brigades and a regiment composed of and led by communists. The combat value of the Republican army increased little by little, but the shortage of officers meant that it could not carry out any major offensives. Nor could it stop the Nationalist offensives, and in March 1939, Madrid fell as an estimated 250,000 government soldiers fled across the border into France.

Foreign involvement

★ The Spanish Civil War was characterised by extensive foreign involvement on both sides. On the side of the coup plotters, Germany and Italy in particular provided troops and military equipment. The Italian expeditionary force, the Corpo Truppe Volontarie, was many times larger than the German one, totalling 50,000 men, with army divisions as well as air and naval units.

The Republic's main foreign support came from the Soviet Union and the international brigades of volunteers from numerous other countries. The Soviet Union supplied war equipment and sent a force of 2,000-3,000 men. Around 32,000 men served in the international brigades, of which an estimated 2,500 were from Great Britain.

In October 1938, the Non-Intervention Committee, dominated by Britain and France, ordered the withdrawal of the international brigades fighting on the side of the Republic, effectively turning a blind eye to the fact that Germany and Italy were helping the Nationalists. This sealed the fate of the legitimate Spanish government.



ULLSTEIN BILD/GETTY

A captured Soviet T-26 tank (left) and a Kleiner Panzerbefehlswagen (small command tank, built on the chassis of the Panzer I). Behind is the German Panzer I. The T-26 is armed with a 45-millimetre gun, while the Panzer I has only two light machine guns.

signalling systems for tactical operations. Therefore, at the outbreak of war in September 1939, each squadron had one or two Ju 52s that could transport supplies and personnel during rapid redeployments. During major offensives, Ju 52s could also act as flying communications centres.

THE BATTLEFIELDS OF Spain also became the testing ground for the dreaded German Flak 18, the 88-mm anti-aircraft gun that was just as capable as an anti-tank gun. Overall, the experience in Spain had a groundbreaking effect on the Luftwaffe's organisation, tactics and equipment. The operation helped to perfect what was then the most modern air force in the world.

While Germany was able to apply the lessons it learned, its counterpart, Italy, whose expeditionary corps made a hopelessly ineffective effort in Spain, failed to make any radical reforms to its armed forces before entering World War II.

Italy's military inadequacy also seems to have escaped the notice of Hitler and parts of the German military leadership. General Warlimont of the German High Command, OKW, who had served in the Condor Legion, testified in US hearings in 1945 about how the poor state of the Italian army had surprised him during World War II. Apparently, he had missed the problems it experienced in Spain.

The civil war did not impact the German army as much as it did the Luftwaffe, although it was in Spain that German armoured troops gained their first experience of war. In a first contingent, 33 Panzer I light tanks were sent to Spain. German personnel served as instructors and trained Spanish crews who were then deployed in combat with the tanks. Since the Panzer I only had two machine guns, there was little in the way of armoured combat. As an emergency solution, each tank company was assigned five anti-tank guns to protect against enemy armoured vehicles. But even these guns were ineffective.

IN TOTAL, THE GERMANS sent more than a hundred of their almost useless Panzer I tanks to Spain. By the autumn of 1938, they had managed to organise two battalions, each with two companies

Condor Legion's new weapons

★ In the 1930s, development of the Luftwaffe had been conducted largely in secret. Many of the fighter planes entering service in Spain had been developed under the guise of civilian aircraft.

The **Heinkel He 111** and **Junkers Ju 86** medium bombers were two of these and were used by Lufthansa as passenger aircraft. They were first used in Spain in spring 1937. The Heinkel was considered superior to the Junkers and after 1939's Polish campaign, the Ju 86 was used for reconnaissance mostly. Outclassed by larger planes and without German air supremacy, the He 111 was also relegated to transport aircraft in 1943.

A bomber version of the **Junkers Ju 52** was one of the first of the new aircraft to be used in Spain in 1936. The same version was also used in Poland in 1939. After that, it was only used as a transport aircraft, its original purpose, including for parachute troops.

The fast **Dornier Do 17** light bomber entered service in spring 1937 and was used on all fronts until the end of 1941, when its short range and inadequate bombload relegated it to non-bombing duties.

In January 1938, the first version of the **Junkers Ju 87** dive bomber entered service with the Condor Legion. A second version was also tested in Spain before the end of the civil war. That and subsequent models were used throughout most of World War II. The last major operation with the Ju 87 took place in Finland in the summer of 1944.

The first version of the **Messerschmitt Bf 109** fighter aircraft entered service in the summer of 1937, and by the end of the war, the improved E version, which was the Luftwaffe's main fighter until 1942, had also been tested in combat.

ALTHOUGH THE core of the Condor Legion consisted of planes, other weapons were also tested in the field for the first time in Spain.

Around 150 **Panzer I** tanks were sent there and used by both German and Spanish units. They proved to be too poorly armed and armoured. Nevertheless, they were still in service during the invasion of the Soviet Union in the summer of 1941.

The newly improved 37-millimetre **Pak 35/36** anti-tank gun was more effective against inter-war tanks in Spain than the German Panzer I. However, in the early years of World War II, it proved unable to penetrate the armour of newer tanks and was gradually replaced.

In Spain, the **Flak 30** anti-aircraft gun (20-millimetre calibre) had problems with reloading and a low firing rate. By the outbreak of World War II, it had been upgraded to a new version, the Flak 38.

One of the most successful weapons tested in the Spanish Civil War was the **Flak 18** 88-millimetre anti-aircraft gun, which was used throughout World War II. With some modifications, it became one of the most feared anti-tank guns and a version was developed to be mounted on tanks.

ULLSTEINBILD DTL./GETTY

The use of the German Junkers Ju 87 dive bomber for direct air support increased the offensive capability of ground forces. Nevertheless, the Luftwaffe continued using it to attack targets behind the front line.

of German tanks and one company equipped with captured Soviet tanks.

However, the prevalence of static positional warfare and the poor performance of the first armoured units led to contradictory and disappointing experiences that initially only seemed to confirm the view of conservative generals that tanks were overrated. Proponents of armoured troops, on the other hand, argued that Spain was not the most suitable country for a large-scale test of modern mobile warfare.

Tank specialists correctly concluded that the setbacks were not due to the method of warfare, but to shortcomings in equipment and training. The German concept of armoured combat had already existed – blitzkrieg pioneer Heinz Guderian had summarised the ideas in his book *Achtung – Panzer!* in 1937. It was necessary to mobilise tanks to achieve a breakthrough. Speed and surprise were vital. Cooperation between the different parts of the armoured divisions was also important. The experience in Spain did not match this picture. In Germany, however, the development of armoured troops according to Guderian's ideas continued, leading to great success in the first years of the war.

GERMANY'S ASSISTANCE TO Spain was not only a military experiment but also served political and economic purposes. Politically, the intervention in Spain was in line with the fierce anti-communism of Hitler and the Nazis.

"GERMANY DENIED THAT ITS AIRMEN HAD PARTICIPATED IN THE RAID"

Moreover, a Franco victory would make Spain a potential ally in the European power game. In economic terms, the aid was accompanied by increased trade between the countries. Germany sold arms to Franco, and bought minerals and metals, among other things, and invested in mines.

The bombing of the town of Guernica by the Condor Legion on the afternoon of 26th April 1937 was considered the most notorious war crime of the Spanish Civil War. The number of casualties is unknown, with estimates ranging from 200 to 1,600 dead. The attack, which also involved Italian air forces, was led by Wolfram von Richthofen and code-named Operation Rügen.

MANY DETAILS OF the raid are still disputed, but the target of the attack was supposedly a stone bridge over the River Oca, which connected the two halves of the city. However, the first bombs did not fall on the bridge but hit the city centre instead,

The German and Italian bombing of Guernica on 26th April 1937 was similar to the subsequent terror bombing of cities during World War II.

BUNDESARCHIV, BILD 183-H25224

and several subsequent waves of attacks dropped their bombs on the same area, where smoke and flames were already rising into the sky. Moreover, between two of the waves, German fighter planes reportedly flew in at low altitude and fired at people in the streets, seemingly contradicting the claim that it was a purely military attack.

Around 80 percent of the city was destroyed by the bombs and subsequent fires. The bridge, which was allegedly targeted, survived without a scratch. In most parts of the world, the raid was perceived as a deliberate terror attack against the civilian population. Germany denied that its airmen had participated in the raid, which was a blatant lie.

However, Guernica was only one of several defenceless towns destroyed by Nationalist bombers during the war, but because of German involvement, it became known far beyond Spain's borders and provoked strong reactions in many parts of the world – not least through Picasso's painting. Less well known is that German bombers carried out several raids on Madrid in November 1936, resulting in around 250 civilian casualties.

Although Franco's propagandists denied that anyone on the Nationalist side had ever carried out a bombing raid on Guernica, the negative publicity led to the end of such attacks on towns.

IN APRIL 1939, Franco's forces secured victory in the civil war, and at the end of May, the Condor Legion returned to Germany, where the men were received with great honours. Shortly before, Germany acknowledged for the first time that its troops had taken part in the fighting on Spanish soil. It was only at this point that the German media was authorised – or ordered – to report on the legion, leading to a wave of warlike depictions of Spain in Nazi propaganda. These contributed to making the German public more receptive to the increasing number of signs that pointed towards a forthcoming war during the summer of 1939.

Hitler's hopes that the Franco regime would join Germany in World War II out of gratitude to the Condor Legion were largely dashed after a fruitless summit between the two heads of state in Hendaye on the Franco-Spanish border in 1940. However, when Hitler invaded the Soviet Union in 1941, Franco sent a volunteer force, the Blue Division, to the Eastern Front as a form of payment to Germany for the legion's contribution to the fascist victory.

Niclas Sennerteg is a journalist and author.

Belated German apology for civil war involvement

★ Many of the officers of the Condor Legion would make a name for themselves during World War II, including Hugo Sperrle and Wolfram von Richthofen, both of whom were promoted to field marshal. Richthofen could not be tried for his involvement in the bombing of Guernica as he died of a brain tumour shortly after the German surrender.

Wilhelm Ritter von Thoma, who led the Condor Legion's armoured specialists for most of the Spanish Civil War, was given command of the Afrika Korps in 1942 and was captured by the British at El Alamein. Fighter pilot Werner Mölders became one of the top German airmen and was promoted to colonel. In 1941, he was appointed inspector of German fighters but was killed a few months later in a plane crash. He was succeeded as inspector by another Spanish veteran, Adolf Galland, who was one of the candidates for the post of West Germany's first air force chief after the war, but he missed out on the role.

Wilhelm Ritter von Thoma.

HISTORIE ARCHIVE

In 1997, then German President Roman Herzog apologised to the survivors on behalf of the German people, both for the bombing itself and for Germany's involvement in the Spanish Civil War. The following year, the German Bundestag decided that military barracks named after former members of the Condor Legion should be renamed.

Franco ruled until 1975

★ General Francisco Franco (1892-1975) was Spain's dictator from 1939 until his death in 1975. In the early 1920s, he participated as an officer in the Spanish colonial war in Morocco (the Rif War, 1920-1926). At the age of 33, he became the youngest general in Europe and then director of a new military academy in Zaragoza. After the fall of the monarchy in 1931 and the government's decision to close his academy, he fell out with the Republic and joined the opposition. Franco was not part of the inner core of coup leaders when the revolt began in the summer of 1936, but a few months later he was elevated to the leadership of the Nationalist side, as none of the other coup leaders could gather enough support. After victory in the civil war, Franco began to eliminate all opposition. Despite help from Germany and Italy, he chose to keep Spain out of World War II and resisted Hitler's pleas for cooperation in the capture of Gibraltar. Throughout Franco's rule, Spain was a harsh dictatorship. After his death in 1975, the country gradually returned to democracy, a process that was completed in 1978.

Francisco Franco.

HISTORIE ARCHIVE

Hermann Göring

AVIATION ACE AND WAR CRIMINAL

After the Nazi Party seized power in Germany in 1933, Hermann Göring quickly built the Luftwaffe into a formidable offensive weapon in the service of Adolf Hitler. But he also helped the Führer realise his plans for a 'Final Solution to the Jewish Question'.

Text: **CHRISTER BERGSTRÖM**

"Lützow, I'll have you shot!" exclaimed Luftwaffe commander Hermann Göring, foaming with rage after being criticised by Günther Lützow, one of Nazi Germany's most prominent fighter pilots.

They were meeting in early January 1945, at a time of crisis when both men could sense that the total collapse of Adolf Hitler's Third Reich was mere months away. Nowhere were the difficulties greater than within the Luftwaffe, whose fighter planes had completely failed to defend German cities and industry from devastating Allied bombing raids.

Lützow was the spokesperson for a group of senior fighter pilots who had requested a meeting with Hermann Göring to voice their criticism. Their discontent had been triggered by Göring's dismissal of the general of fighters, Lieutenant General Adolf Galland, one of the country's greatest aviation aces. Göring raged: "What you're presenting me with here, gentlemen, is treason – mutiny! It's absolutely monstrous that you should conspire behind my back ... I shall take appropriate action!"

Neither Göring nor any other Nazi Party leader welcomed criticism from subordinates, least of all in a difficult situation like this.

How different things had been when Hermann Göring himself was a young and famous fighter pilot in World War I. It was a time to which he yearned to return.

BORN IN 1893, Göring had grown up in the medieval castle of Veldenstein, bought for his parents by his godfather Hermann Epenstein. Life in the castle fired young Hermann's imagination and inspired him to choose a military career. He enthusiastically entered World War I in 1914, but was soon hampered by rheumatism in both knees, so he turned to flying.

Göring quickly proved to be a very talented fighter pilot and unit commander. In the spring of 1917, he was asked to take over the demoralised ►

Göring led the Luftwaffe air force and was one of Hitler's closest men.

ULLSTEIN BILD DT/GETTY

Jasta 27 fighter squadron. The pilots had recently experienced nothing but setbacks, but Göring managed to reverse this trend through his own personal example. Within a few months of becoming commander, the unit had shot down 35 enemy aircraft – Göring personally accounted for 16 of them. In 1918, he was awarded the highest honour, the Pour le Mérite, commonly known as the Blue Max, and took command of the fighter squadron that Manfred von Richthofen – the Red Baron – had led until his death.

BUNDESARCHIV 146-2006-0126

Günther Lützow.

AFTER WORLD WAR I, Göring began working in civil aviation. At the end of 1919, he joined the new Svenska Lufttrafikaktiebolaget airline as a pilot and settled in Stockholm, Sweden.

The young captain alternated commercial flights with private charters. On one of the latter occasions, in February 1920, he flew the wealthy nobleman Eric von Rosen from Stockholm to his Rockelstad estate near Flen, in Sweden. Göring was invited to stay overnight, and there the German airman made a life-changing acquaintance: von Rosen's 31-year-old sister-in-law, Carin von Kantzow. Although married with a son, Carin fell madly in love with the German flying ace and began a scandalous relationship with him.

Göring was living in Stockholm at the time, but in the summer of 1920 he and Carin moved to Munich, where they married in February 1923. It was then that Göring joined the German Nazi Party – a movement that had gained support among the many Germans, including Göring himself, who'd been left deeply embittered with the outcome of World War I.

Carin had a heart condition and they returned to Stockholm so she could receive treatment in August 1923. Shortly afterwards, Göring visited Munich to take part in the Nazis' coup attempt, the so-called Beer Hall Putsch, on 9th November 1923. But things did not go as the Nazis intended, at least not initially. The coup was defeated, Hitler was imprisoned and Göring narrowly escaped with a bullet to his groin. It was while being treated for the pain in an Austrian hospital that he developed his morphine addiction.

In March 1925, Hermann and Carin moved to 23 Odengatan in Stockholm. In late summer 1925, he was admitted to hospital for detox and eventually ended up at Långbro mental hospital, where people were treated for drug addiction. Once Göring was drug-free, he was discharged in October 1925 and then worked as a representative for the German Heinecke parachute company in Sweden.

When the German government issued an amnesty for participants in the Nazi coup attempt, he returned to Germany in 1927 and entered politics full-time. In the 1928 elections, he entered the Reichstag, representing the Nazi Party. The darkest day in Göring's life came on 17th October 1931, when

Hermann Göring (rear) with his friend Bruno Loerzer (front) in an Aviatik B.I reconnaissance plane in 1914. It was Loerzer who convinced Göring to join the air force.

ULLSTEIN BILD/RITZAU SCANPIX

Hatred and intrigue in Nazi high command

★ Hermann Göring was deeply involved in the intrigue that existed between the high-ranking Nazis closest to Hitler, which was mainly caused by the dictator's tactic of divide and conquer. Among other things, Göring was involved in planning the assassination of SA leader Ernst Röhm during the Night of the Long Knives in 1934, he outmanoeuvred Commander-in-Chief von Blomberg by defaming him for immoral living, and he waged a veritable war against the Minister of Propaganda Joseph Goebbels and Foreign Minister Joachim von Ribbentrop. But none was a more dangerous opponent than Hitler's personal secretary, Martin Bormann. There was a mutual hatred between Bormann and Göring, which ended during the last days of the war with Bormann managing to get Göring sentenced to death in his absence.

Hitler, Göring and Joseph Goebbels.

NATIONAL ARCHIVES, US

his beloved Carin died of a heart attack. It was something he would never really recover from and it seems to have affected his character, making him even more bitter.

DESPITE BELONGING TO the still controversial Nazi Party, he was made speaker of the Reichstag in 1932. Upon Hitler's rise to power in January 1933, Göring became minister of the interior of the largest German province, the Free State of Prussia, as well as commissioner for aviation. He also used his position of power to have a large hunting estate built, which he named Carinhall after his late wife.

As founder of the Gestapo secret police – which he transferred to Heinrich Himmler in 1934 – as well as being Hitler's deputy and heading up Germany's four-year economic plan, Göring played a key role in the Nazis' persecution of Jews, Roma, socialists and others. At the same time, Göring maintained good relations with many in Sweden, especially among the upper classes. In 1938, he was made an honorary member of the Swedish Hunters' Association, and in 1939, King Gustaf V – a Nazi sympathiser – awarded him the Swedish Royal Order of the Sword's Grand Cross. Notably, this was after *Kristallnacht* (Night of Broken Glass) in 1938, after the introduction of racial laws in 1935, and at a time when the existence of Nazi concentration camps was general knowledge.

THE NEW AIR force, the Luftwaffe, was also his creation. As its commander, Göring was one of the 20th century's great innovators. He was responsible for most of the Luftwaffe's revolutionary new methods, organisation and equipment. He hadn't personally come up with it all, but he was a very responsive manager, with a fantastic ability to see the potential of new ideas.

Without Göring, there wouldn't have been a German blitzkrieg – the tactic that gave Germany its astonishing victories against what were often far stronger opponents in 1939-41. Thanks to his insights, the concept of blitzkrieg was developed, where Stuka bombers acted as flying artillery to clear the way for rapidly advancing tanks. Wherever they encountered serious resistance, it was shattered by swarms of bombers, guided by radio from the front line. Göring was credited with both the integration of bombers into the air force and the revolutionary cooperation between air and ground forces.

"WITHOUT GÖRING, THERE WOULDN'T HAVE BEEN A GERMAN BLITZKRIEG"

Hermann Göring also acquired the twin-engine Messerschmitt 110, the world's first truly long-range fighter aircraft, for the Luftwaffe. It became the most successful fighter plane during the first few years of the war. However, when the United States copied the idea with its Mustang fighter jets in 1944, the German plane was finally bested.

Göring was blamed for Germany's defeat in the Battle of Britain in 1940, when the Luftwaffe tried to wipe out Britain's fighter planes. The main reason the British succeeded was that in September 1940, the Luftwaffe started bombing London instead of continuing its successful attacks on the Royal Air Force's bases.

Documents show that it was Hitler and several of his generals who pushed for the bombings to be directed at London, while Göring, in fact, protested, because it would mean an end to the airbase attacks.

Göring was also accused of making unrealistic promises that his transport aircraft could supply

Article continues on page 32 ►

HISTORIE ARCHIVE

Carin von Kantzow got divorced in order to live with Hermann Göring.

ULLSTEIN BILD DTL/GETTY

Göring during a visit to the Jagdgeschwader 2 (JG 2) "Richthofen" fighter wing, stationed on the English Channel, in 1940. To the right of Göring is the pilot Helmut Wick – the youngest in the Luftwaffe to be appointed wing commander. Wick was shot down in the Channel at the end of November 1940, with 56 confirmed air victories.

▶ the besieged German army in Stalingrad during the winter of 1942–43. But Göring had actually built up a large, efficient fleet of transport aircraft. The hundreds of planes available at Stalingrad at the end of 1942 were more than enough to supply the surrounded army, and the pilots actually preferred to fly in bad weather, because it enabled them to hide from the enemy.

The reason why the airlift to Stalingrad failed was that the pilots refused to fly for fear of Soviet fighter planes. When Göring sent his representative to the area in January 1943, the supply flights gained momentum – but, by then, it was too late.

ALMOST THROUGHOUT WORLD War II, the Royal Air Force carried out night-time bombing raids on German cities, but they resulted in terrible losses for the British. Between 1941 and 1944, 7,200 British bombers were lost, which meant that the entire fleet of planes was effectively wiped out and replaced eight times during that period. The main reason was that Göring had built up the world's first organised force of night fighters early on in the war – and with great foresight; 70 per cent of the British bomber losses were caused by those German interceptors.

While he was a brilliant and, for a long time, popular air force commander, Göring was a totally unscrupulous key figure in the Nazi terror system. This is particularly evident in the brutal Hunger Plan, which he developed as head of the four-year economic plan for the invasion of the Soviet Union in 1941. When Göring presented this to the generals of the armed forces on 2nd May 1941, he said: "As a result, many tens of millions of people will doubtlessly starve."

At a conference, Alfred Rosenberg, Nazi minister for the occupied Eastern territories, noted Göring's attitude: "The fate of the large cities, especially Leningrad, is of absolutely no importance. This war will witness the greatest starvation since the Thirty Years' War."

IT IS IMPOSSIBLE to determine exactly how many people in the Soviet Union succumbed to starvation as a result of the Nazi occupation, but the number is in the millions. During the first two years, the Germans plundered enough food for 21.3 million people from the occupied parts of the federation. Nazi policy led to 20 to 40 million deaths there. According to recent German research, seven million of them died from the Nazi-caused famine alone.

In addition to those tens of millions of deaths, Göring also bore personal responsibility for the Holocaust, which claimed the lives of six

ULLSTEIN BILD DTL/GETTY

Doctor Sigmund Rascher (right) performs cooling experiments for the Luftwaffe at Dachau concentration camp in 1942.

Ordered experiments on prisoners

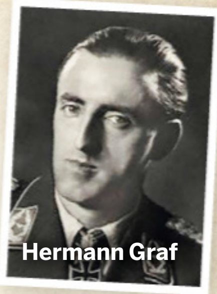
★ One of many experiments carried out on concentration camp prisoners with Hermann Göring's blessing involved the physical effects of high altitudes, low pressure, cooling and freezing. In each case, the tests led to a painful death for the prisoner.

During the trial of Luftwaffe doctor Sigmund Rascher in Nuremberg in 1946-47, former prisoner Walter Neff testified about such an experiment in which two Soviet prisoners of war managed to survive for several hours in icy water. After three hours, one Soviet said to the other, "Comrade, tell the officer that he may shoot us," but was told that no mercy could be expected from the "fascist dog". They shook hands and said, "Goodbye, comrade."

It took five hours for both prisoners of war to die of hypothermia.

The conspiracy of fighter pilots

★ The German fighter commanders who took part in the mutinous meeting of January 1945 included some of the most prominent pilots of World War II. The most famous was Lieutenant Colonel Hermann Graf, who was the first ever to shoot down 200 enemy planes. Günther Lützow scored 108 air victories, while Colonel Gustav Rödel achieved 98. Colonel Eduard Neumann led the unit in which Hans-Joachim Marseille served – the ace who shot down 17 British fighter jets in one day. Colonel Hannes Trautloft had long been the right-hand man of fighter pilot General Adolf Galland.


HISTORIE ARCHIVE

Hermann Graf

million Jews. As early as July 1941, he ordered Reinhard Heydrich, the head of the Nazi security service, to prepare the "Final Solution to the Jewish Question". Göring also committed war crimes in his position as head of the air force. Among other things, he was responsible for horrific human experiments on Soviet prisoners of war in the Birkenau, Dachau and Auschwitz concentration camps.

Remarkably, in the midst of all this, Göring also retained a 'human' side. He had a bold sense of humour and encouraged the many light-hearted jokes about him that circulated in Germany. Other than Hitler, no Nazi leader came close to the popularity that Göring enjoyed.

He was also surprisingly lenient with subordinates who made mistakes. Although whole units could be proven guilty of cowardice in the face of the enemy, Göring was reluctant to punish his airmen. He could threaten them with court martial, but this was rarely carried out.

FROM 1943, THE Luftwaffe lost more and more of its advantage. When the US deployed its air force in Europe in earnest that year, Allied air superiority grew rapidly. In combat against large formations of the American B17 bomber, also known as the Flying Fortress – equipped with heavy machine guns – the Luftwaffe suffered heavy losses. Although the Germans still shot down more planes than they lost, it was a war of attrition that they could not hope to win, because the Allies simply had more planes and pilots than they did.

The inability to defend Berlin against bombs was ultimately Göring's downfall. His former popularity with civilians and pilots, as well as with Hitler, plummeted. During his meeting with the rebel fighter commanders in January 1945, when he threatened them with execution, Göring realised how isolated he was.

Characteristically, Göring did not carry out his threats against the rebels. All those involved, with the exception of Lützow, were allowed to return to their units and keep their posts. The only thing that happened to Lützow was that he was relocated from Germany to Italy, where he was appointed commander of fighter operations in the region.

NATIONAL ARCHIVES, US

Eight of the defendants at Nuremberg, front row from left: Hermann Göring, Rudolf Hess, Joachim von Ribbentrop and Wilhelm Keitel. Back row from left: Karl Dönitz, Erich Raeder, Baldur von Schirach and Fritz Sauckel.

But for Göring, it was all over. He reportedly repeated a popular German saying to one of the rebel pilots: "Enjoy the war, peace will be terrible."

In April 1945, when Hitler was isolated in a Berlin that was surrounded by the Red Army, Göring tried to seize power, after which Hitler ordered that he be removed from all his posts and arrested. When Göring was captured by the Allies, he experienced the spotlight one last time. During the Nuremberg trials of war criminals, he demonstrated a dazzling aptitude for argument, but it couldn't save him. The court's judgment summed up Hermann Göring's malevolence as a Nazi quite well: "His guilt is unique in its enormity." On 15th October 1946, while in prison awaiting execution by hanging, he swallowed a cyanide capsule and took own his life. ✪

Christer Bergström is a writer on military history.

Messerschmitt Bf 110

Adapted to destruction

Germany's most versatile and hard-to-beat plane was only undone by its own tactics.

Text: **CHRISTER BERGSTRÖM**

The lone Messerschmitt Bf 110 came in to land at Arnhem-Deelen Air Base. It was the afternoon of 29th April 1944, and Major Hans-Joachim Jabs, the head of the Luftwaffe's Nachtjagdgeschwader 1 night fighter squadron, had just test-flown a new Bf 110 G-4. Suddenly – as if from nowhere – half a dozen brand-new Spitfire model IXs swooped down on the lone German. The British were led by ace Major Geoffrey Page, with 15 victories to his name.

According to the usual stereotype of the Bf 110, the battle should have been a foregone conclusion. But Major Jabs had pitted a Bf 110 against the Spitfire many times before, and he knew exactly what to do. He made a tight turn that forced the British to pass in front of the nose of his plane. A short and well-directed burst was enough to tear apart Pilot Officer Roy Pullin's Spitfire, which hit the ground in a ball of flame.

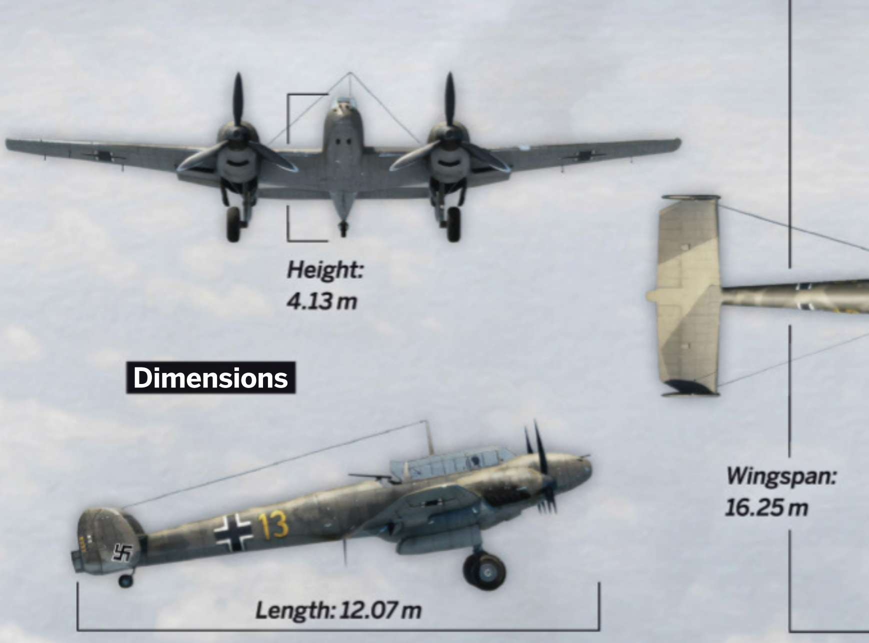
A few seconds later, Jabs had another Spitfire in his sights and fired. Flying Officer John Caulton crashed on the same airfield where Jabs now had to make a swift landing. The other Spitfires shot up the landed Messerschmitt, but Jabs escaped unharmed and soon afterwards was able to shake hands with the downed Caulton.

MANY MYTHS HAVE been woven around Germany's Messerschmitt Bf 110 twin-engine fighter aircraft. A fairly common belief is that it was not suitable as a day fighter and that it performed poorly in combat. However, this claim doesn't stand up to closer scrutiny.

In the summer of 1934, the command staff of the still-secret Luftwaffe presented a study proposing what was at the time a completely revolutionary idea: a twin-engine fighter plane, heavily armed with both autocannons and machine guns, designed to protect its own bombers from enemy fighter ▶

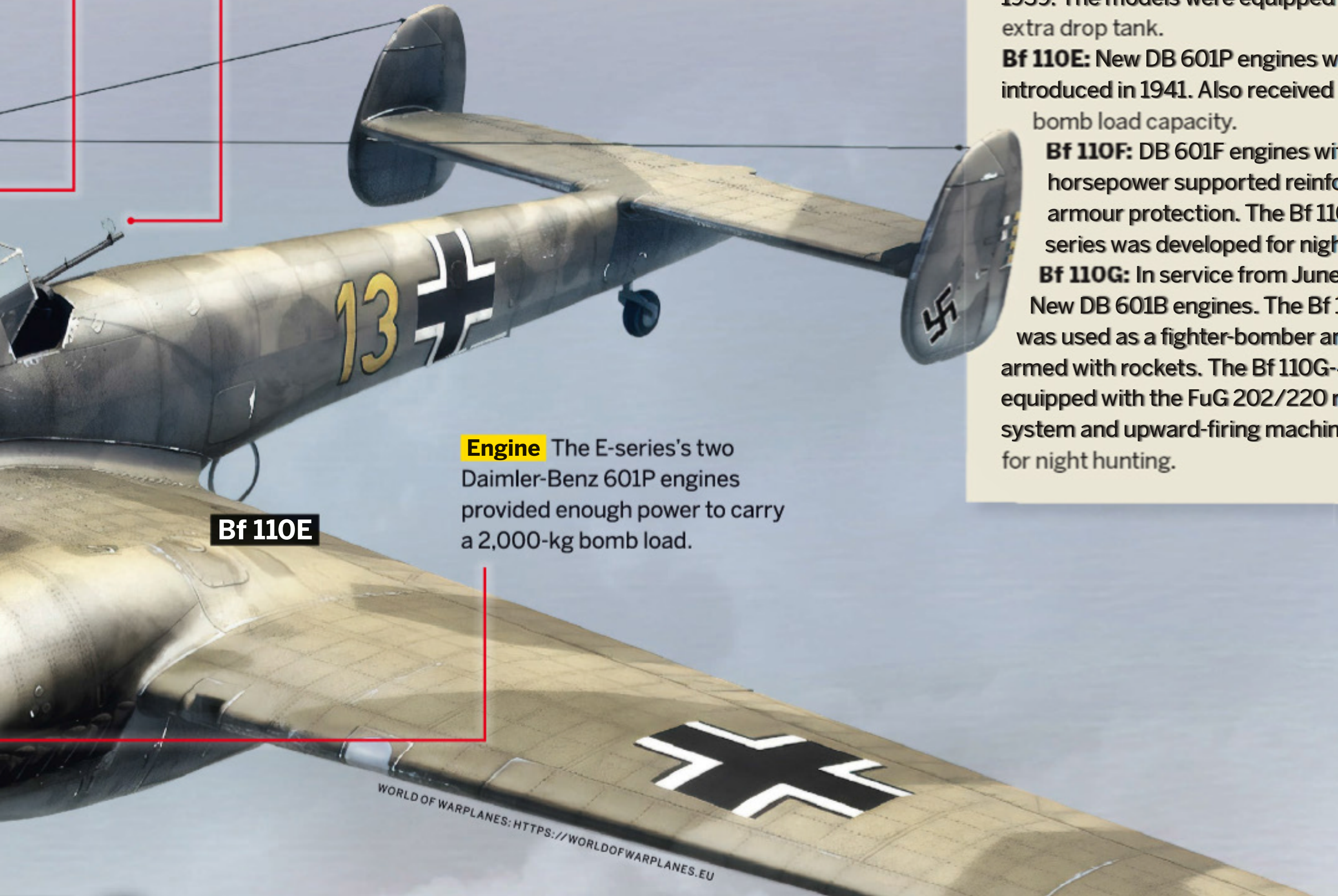
Feared firepower The Bf 110's greatest strength was its powerful air combat weapon system. It had four machine guns and two autocannons in the nose. The G-series could be equipped with even more autocannons.

Dimensions



Range With a range of up to 1,100 kilometres, the Bf 110 could carry out much longer missions than, for example, the Bf 109 (range: 440-572 km).

Rear gunner A manned 7.92-mm MG 15 machine gun was used for protection against attacks from the rear. The MG 15 was later replaced by the MG 81 and the twin-barrelled MG81Z.



WORLD OF WARPLANES: HTTPS://WORLDOFWARPLANES.EU

Engine The E-series's two Daimler-Benz 601P engines provided enough power to carry a 2,000-kg bomb load.

Bf 110 models

Bf 110A-B: Prototype series with Junkers Jumo 210 B engines. Limited production of the Bf 110B series.

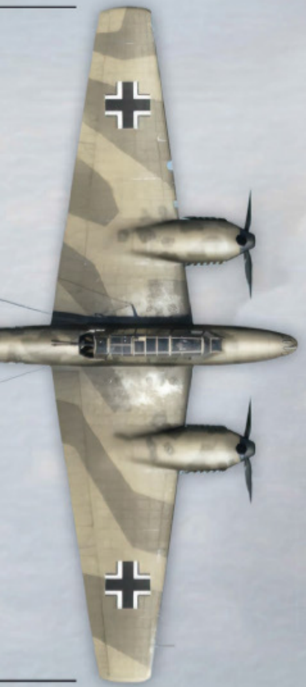
Bf 110C: First mass-produced models appeared in 1938. The aircraft was equipped with DB 601 engines.

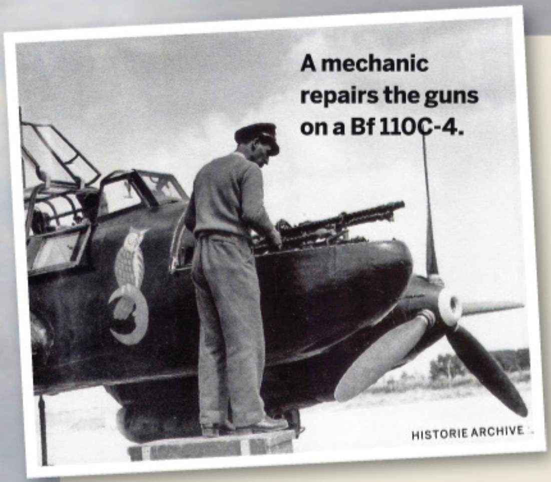
Bf 110D: In production from the end of 1939. The models were equipped with an extra drop tank.

Bf 110E: New DB 601P engines were introduced in 1941. Also received increased bomb load capacity.

Bf 110F: DB 601F engines with 1,350 horsepower supported reinforced armour protection. The Bf 110F-4 in the series was developed for night fighters.

Bf 110G: In service from June 1942. New DB 601B engines. The Bf 110G-2 was used as a fighter-bomber and was armed with rockets. The Bf 110G-4 was equipped with the FuG 202/220 radar system and upward-firing machine guns for night hunting.





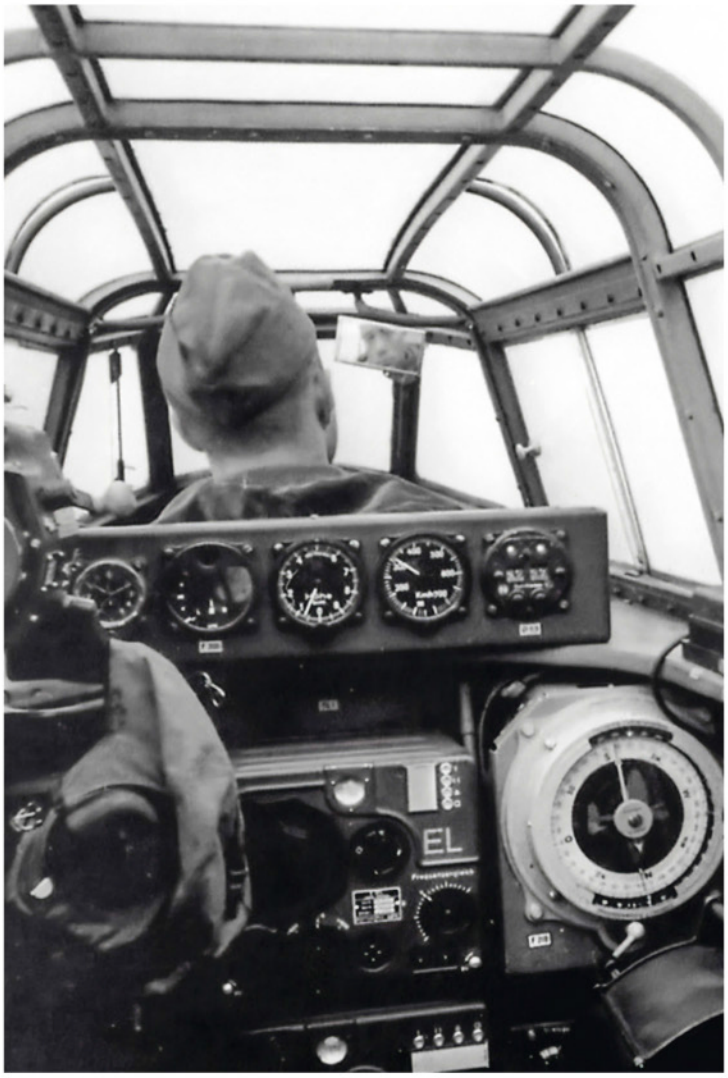
A mechanic repairs the guns on a Bf 110C-4.

HISTORIE ARCHIVE

Deadly guns

★ The Messerschmitt Bf 110 was one of the most heavily armed fighter aircraft in the world when it entered service. Early models had four 7.92-mm machine guns and two 20-mm autocannons in the nose. Later, some models replaced the machine guns with two extra 20-mm autocannons.

Many of the night fighter variants of the G-series were also equipped with the 'Schräge Musik' weapon installation – upward-pointing 20-30-mm autocannons mounted behind the cabin. These made it possible to attack bombers from below.


HISTORIE ARCHIVE

Inside the cockpit of a Bf 110. The instrument panel behind the pilot belongs to the signaller/acting gunner. The picture was taken while flying over German-occupied France.

HISTORIE ARCHIVE

A rear gunner inspects his MG 15 machine gun.

attacks. The idea was that these twin-engine fighters would be sent out at high altitude over the bombers' intended target area to clear the air of enemy fighters before the bombers arrived to carry out their raid. Thus, the fighter escort doctrine that most air forces would come to embrace was born – although it would be ten years before the Western Allies discovered its benefits.

The German aerospace industry was commissioned to develop an aircraft based on this principle of providing protection to bombers. The new aircraft was called the *Zerstörer* (Destroyer). On 12th May 1936, Rudolf Opitz test-flew the first Bf 110 and found that it was even faster than the Luftwaffe had requested, and quicker than the Messerschmitt Bf 109 B-1 of the time. When World War II broke out, the Bf 110 was the most modern fighter aircraft in service worldwide.

IT'S OFTEN SAID that the Bf 110 could not turn as tightly as single-engine fighters. Good manoeuvrability was, of course, an important factor in the fighter battles of World War II, but not as much as it had been during World War I's dogfights between slow biplanes and triplanes that circled in the same area for a long time.

The fighter battles of WWII were more like a miniature 'Big Bang': as both sides clashed, the formations broke up explosively as all the aircraft scattered at high speed in different directions. In such a battle, speed, climb and dive performance were at least as important as manoeuvrability. The ability to turn sharply is therefore more a defensive feature, making it easier to avoid being hit by a pursuer's fire. But offensively, a fighter pilot benefits more from engine power.

Hubert 'Dizzy' Allen, who flew a Spitfire during the Battle of Britain, wrote: "We were better at dogfighting than the fighter arm of the Luftwaffe, but only because both the Spitfire and Hurricane were more manoeuvrable than the Messerschmitt 109 and 110. In fact, dogfighting ability was not all that important during the war. Fighter attacks were hit-and-run affairs on average. Either you dived with the sun behind you and caught him napping, or he did that to you."

The Bf 110 was built to dive on enemy aircraft like a hawk attacking pigeons. With superior speed and altitude, it could attack effectively without being drawn into dogfights. When engaging in this kind of lightning attack, the Bf 110's armament was unrivalled at the time: two 20-mm autocannons and four machine guns concentrated in the nose.

In addition, the aircraft had relatively ample space for carrying ammunition. For each of its autocannons, the Messerschmitt Bf 110 could carry 180 shells, three times more than the Bf 109 fighter,

A Bf 110 from Zerstörergeschwader 76 (ZG 76) over the English Channel in August 1940. The 'shark mouth' painted on the nose inspired the Royal Air Force in North Africa and the Flying Tigers in China to decorate their aircraft.

HISTORIE ARCHIVE

giving the aircraft a combined firing time of just over 20 seconds.

IN TERMS OF airspeed, the 1940 Bf 110 models were on a par with both the Bf 109 and the Spitfire, and were considerably faster than the Hurricane. It could dive away from any British fighter, and climbed better than the Hurricane and almost as well as the Spitfire – even then, if it attacked the British in a quick dive from above, its accumulated speed made it impossible for any fighter to follow when it rapidly pulled up again.

As the Bf 110 was a two-seater, it also had a rear machine gun. Robert Stanford Tuck served as a flight lieutenant in the RAF during the Battle of Britain and went on to become one of the RAF's first truly great fighter aces. He described the Bf 110 as "an airplane that was very unpleasant to face, because of its quite heavy armament in the nose. Rule number one was: make sure you do not get a 110 on your tail. If that happened, you could be sure to get a whole lot of ammo over yourself, concentrated. In addition, [the Messerschmitt Bf 110] had a rear gunner, and I had a feeling that their rear gunners were quite good at aiming and very determined."

"THE BF 110 WAS BUILT TO DIVE ON ENEMY AIRCRAFT"

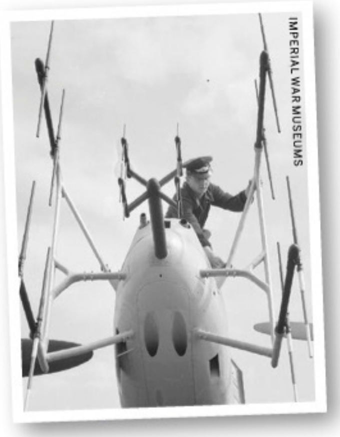
THE MESSERSCHMITT BF 110 was superior to the Bf 109 not only in armament, but also in terms of range – a significant factor in Luftwaffe operations over the British Isles. While the 109s had to turn back once they reached a point just north of London, the 110s could reach as far as Scotland.

It is well known that the Bf 110 performed extremely well during the invasions of Poland and France in 1940. But according to the myth, it fell short during the Battle of Britain in the summer and autumn of 1940. In fact, with 1.5 kills for every loss, Bf 110 units performed better than any fighter aircraft on either side during the Battle of Britain. In comparison, both the Spitfire and Bf 109 were 1.4 to 1 and the Hurricane was 1.2 to 1. Undoubtedly, the Battle of Britain took a heavy toll on the Bf 110s, ►

▶ but they suffered no more than any other German aircraft, and in fact, the British fighter squadrons had a higher loss ratio.

Having distinguished itself as the most effective day fighter of 1940, that autumn the Bf 110 was given a new area to literally test its wings as a night fighter. The British night bombing of Berlin in August 1940 infuriated Hitler and he demanded that the Luftwaffe's best fighters be deployed to defend the capital. This became the Bf 110's next task.

Thanks to its extended range, high speed and powerful armament, the Bf 110 became the most successful night fighter aircraft of World War II from the outset. Because of its spacious cabin, a third crew member (a radar operator) could also be placed in the aircraft. Using onboard radar and an ingenious fighter guidance system, the Bf 110s caught the British bombers in the darkness of night and inflicted a terrible bloodbath on RAF bombers. The statistics were frightening: over 8,000 Bomber Command aircraft were lost between 1940 and 1945. With an average strength of 800 bombers at any one time, this means that the entire force was wiped out ten times over in the space of five years. The Bf 110s accounted for most of these losses.


IMPERIAL WAR MUSEUMS

Night fighter version of a Bf 110G equipped with Lichtenstein radar, which was called *Matratze* (Mattress).

WHEN HITLER INVADED the Soviet Union in June 1941, the Luftwaffe had no close support aircraft other than a handful of old Henschel 123 biplanes. This was subsequently remedied by the deployment of the Bf 110 as an attack aircraft. In this role, the machine performed at least as well as it did as a fighter. The specially built attack version, the Bf 110 E, carried two tonnes of bombs – the same amount as regular bombers – and could outfly any Soviet fighter at low altitude prior to 1943. At treetop level, the Bf 110 reached 530 km/h, compared to 526 km/h for the Yakovlev Yak-1 and 497 km/h for the P-39 Airacobra.

During the Soviet counteroffensive in the winter of 1942-43, Bf 110 attack aircraft were often the only thing standing between the Germans and impending disaster at the hands of the increasingly competent Red Army.

On the Eastern Front, the Bf 110 was also used with great success as a reconnaissance aircraft. The more the initiative in the war shifted to the Soviet side, the more important Luftwaffe aerial reconnaissance became. By constantly monitoring Soviet troop movements from the air, the Germans could often concentrate their increasingly limited forces at key points to counter Soviet attacks. Here the high-speed, camera-equipped Bf 110s played a crucial role. Undoubtedly, the Luftwaffe's reconnaissance flights on the Eastern Front helped to delay Germany's final defeat in the war.

IN THE AUTUMN of 1943, as the war started to draw to a close, the Bf 110s were given one last important role: to help against the American bombing of Germany.

In January 1943, the US Air Force launched an offensive against industrial targets in Germany. The Americans' four-engine Flying Fortresses, each armed with 12 heavy machine guns, flew in large, expertly structured formations that sent an almost impenetrable hail of bullets in all directions. It was suicide for German fighters to fly into such a formation. Whatever they tried, the results were the same.

In September 1943, the *Reichsverteidigung* (Defence of the Reich) was in crisis. US bombing raids increased in intensity and the damage to bombing targets became more severe. Attacks

HISTORIE ARCHIVE

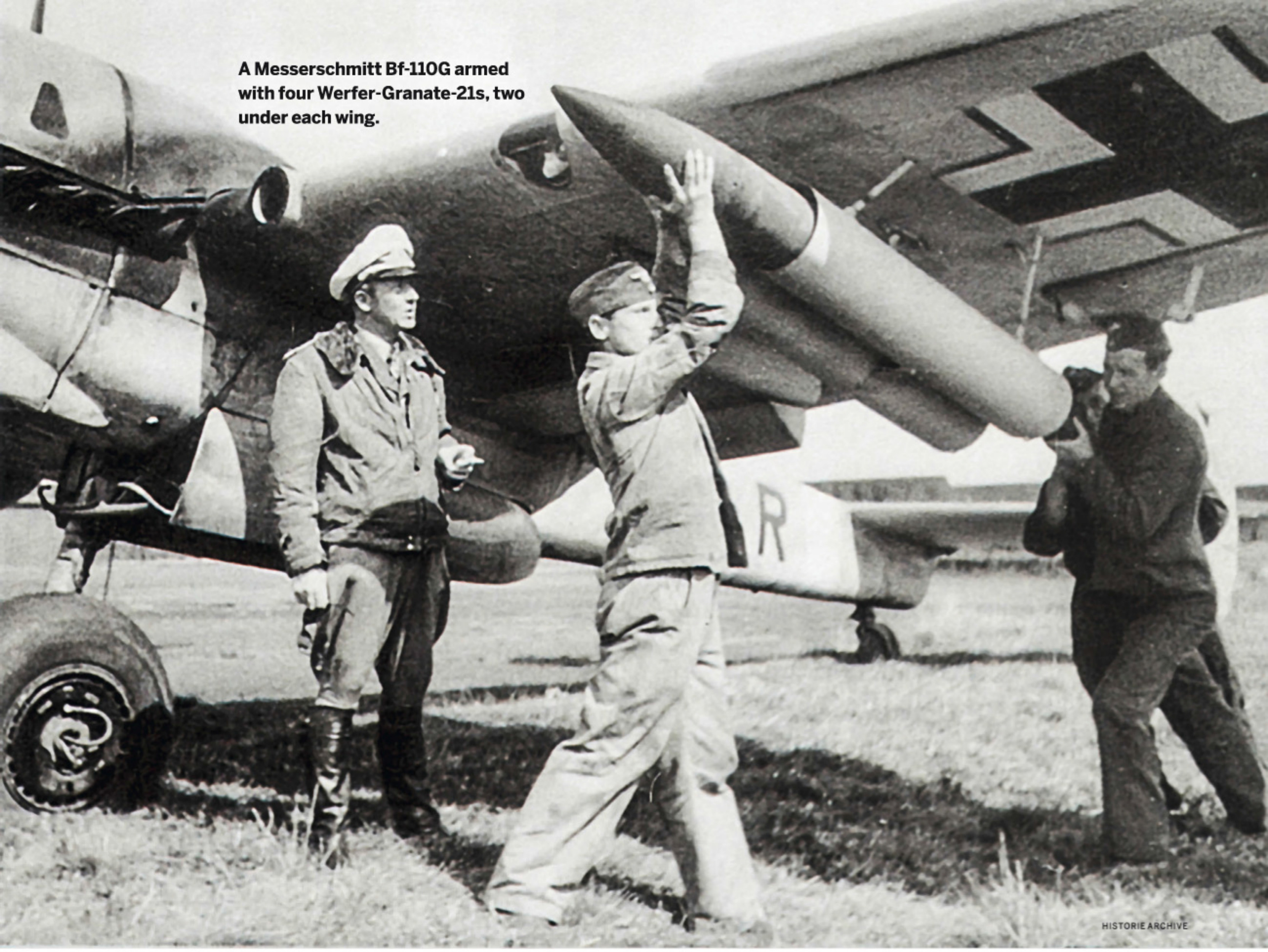
Heinz-Wolfgang Schnaufer.

The ace with 121 victories

★ The most successful Bf 110 ace was Heinz-Wolfgang Schnaufer, who shot down 121 British aircraft in 164 combat missions with the plane. That's three times more than the US's greatest air ace of the war, the Swedish-born Richard Ira Bong, who scored 40 kills in 200 combat missions (interestingly, Bong also flew a twin-engine fighter, the P-38 Lightning).

Schnaufer was 21 years old when he began his career as a night fighter pilot, and was known for his many serial kills – multiple victories on the same day: for example, four each on 22nd June 1944, 13th August 1944 and 23rd September 1944, five on 25th May 1944 and ten on 21st February 1945. Schnaufer secured two thirds of his air victories, 79, in 1944 and 1945, when the Allies had a massive advantage in the air.

Schnaufer survived the war but was killed in a car crash in France in 1950. Today, the side of Schnaufer's Bf 110 plane with 121 painted small aircraft, each representing a kill, can be viewed at the Imperial War Museum in London.



A Messerschmitt Bf-110G armed with four Werfer-Granate-21s, two under each wing.

HISTORIE ARCHIVE

on the Messerschmitt plants in Regensburg had delayed the production of the Me 262 jet aircraft by several months.

At this point, *General der Jagdflieger* (General of Fighters) Adolf Galland had a stroke of genius: twin-engine Messerschmitt 110s and 410s (a further development of the 110) would be deployed and fire rockets directly into the US formations to break them up. Single-engine German fighters could then pick off individual bombers.

This concept became an actual ‘Columbus’s egg’. During September 1943, an average of one bomber out of 33 deployed was shot down. In October 1943, the twin-engine Messerschmitt with rockets went into the skies, and the result was exactly what Galland had expected. In three operations, the Americans lost more than one in seven aircraft deployed on each mission.

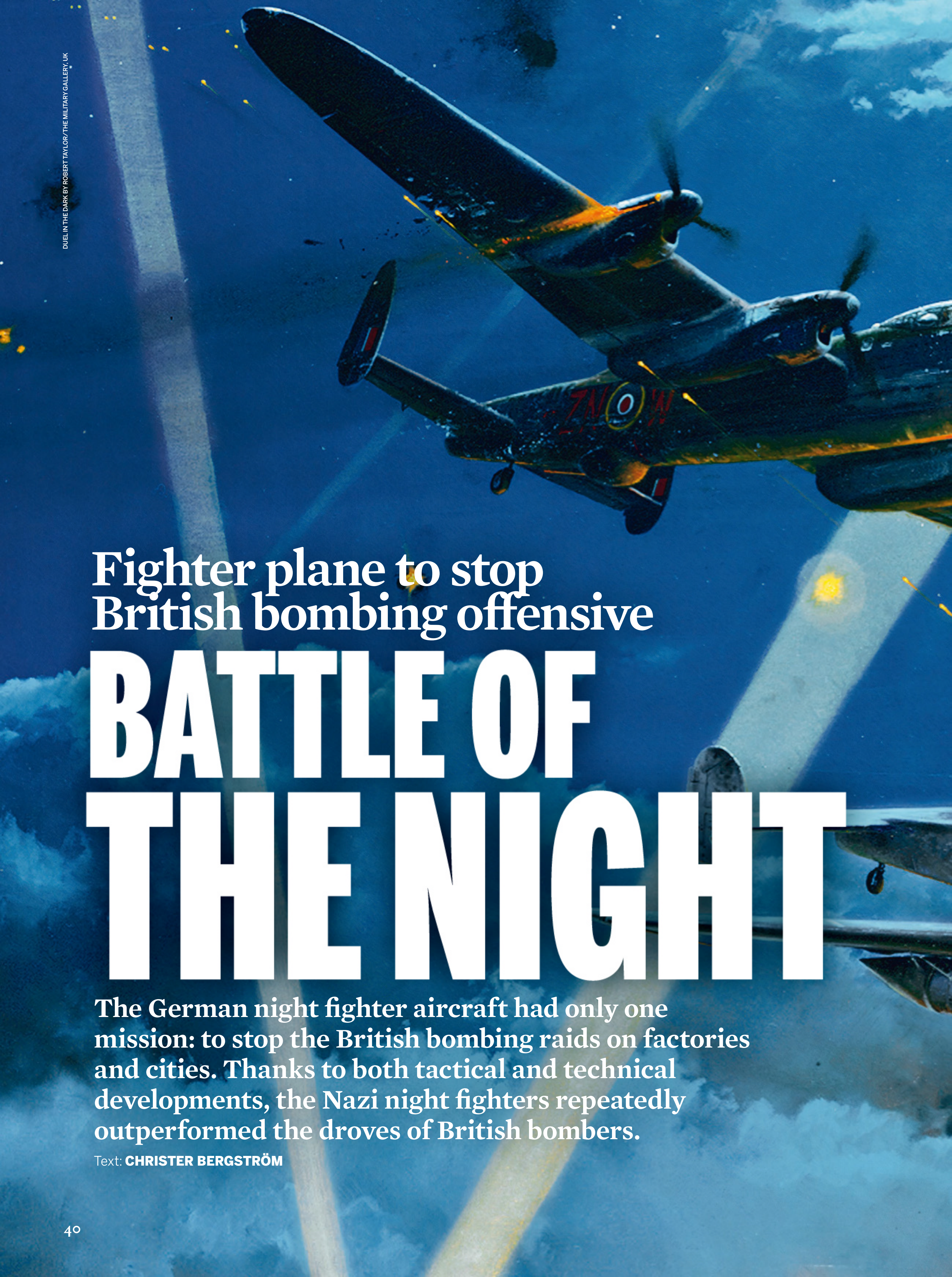
It was a setback that forced them to cancel the entire strategic bombing campaign against Germany. German industry breathed a sigh of relief and soon reached record levels of wartime production. It was not until February 1944, when enough Mustang fighters came into service to escort the bombers, that the US air offensive could resume.

“THE ATTACK VERSION CARRIED 2 T OF BOMBS”

Ironically, it was by applying the German Zerstörer tactic – the one for which the Bf 110 had been developed – that the superior Mustangs were eventually able to defeat the Luftwaffe.

CONSIDERING THE BF 110’s great success in so many areas – as a day fighter, night fighter, reconnaissance aircraft, support aircraft and finally as a ‘battering ram’ against the Flying Fortresses – the Bf 110 must be considered one of the most successful aircraft of World War II. It is difficult to find an aircraft that was so versatile and successful in so many different areas.

Christer Bergström is an author and military history writer.

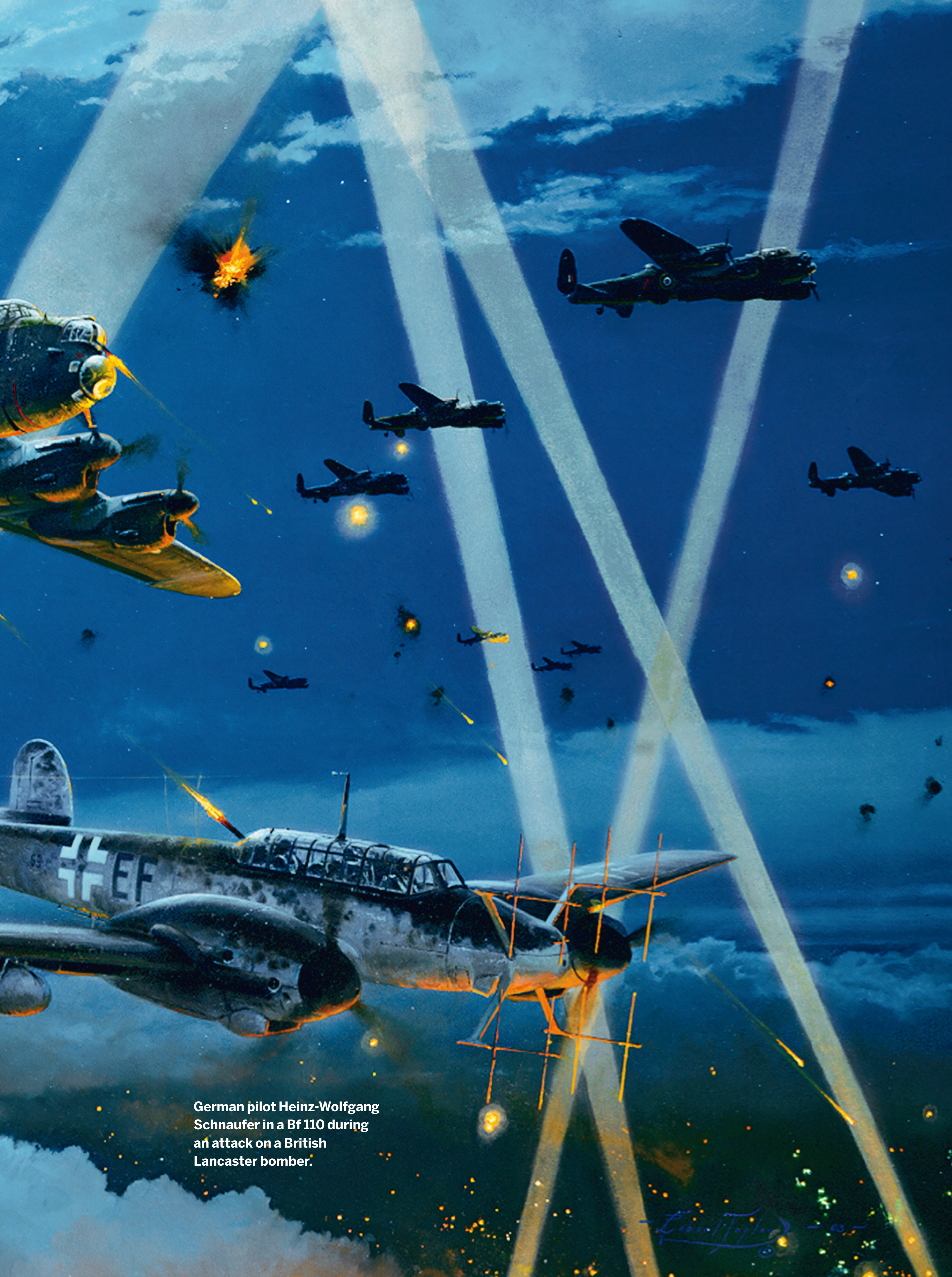

DUEL IN THE DARK BY ROBERT TAYLOR/THE MILITARY GALLERY, UK

Fighter plane to stop British bombing offensive

BATTLE OF THE NIGHT

The German night fighter aircraft had only one mission: to stop the British bombing raids on factories and cities. Thanks to both tactical and technical developments, the Nazi night fighters repeatedly outperformed the droves of British bombers.

Text: **CHRISTER BERGSTRÖM**



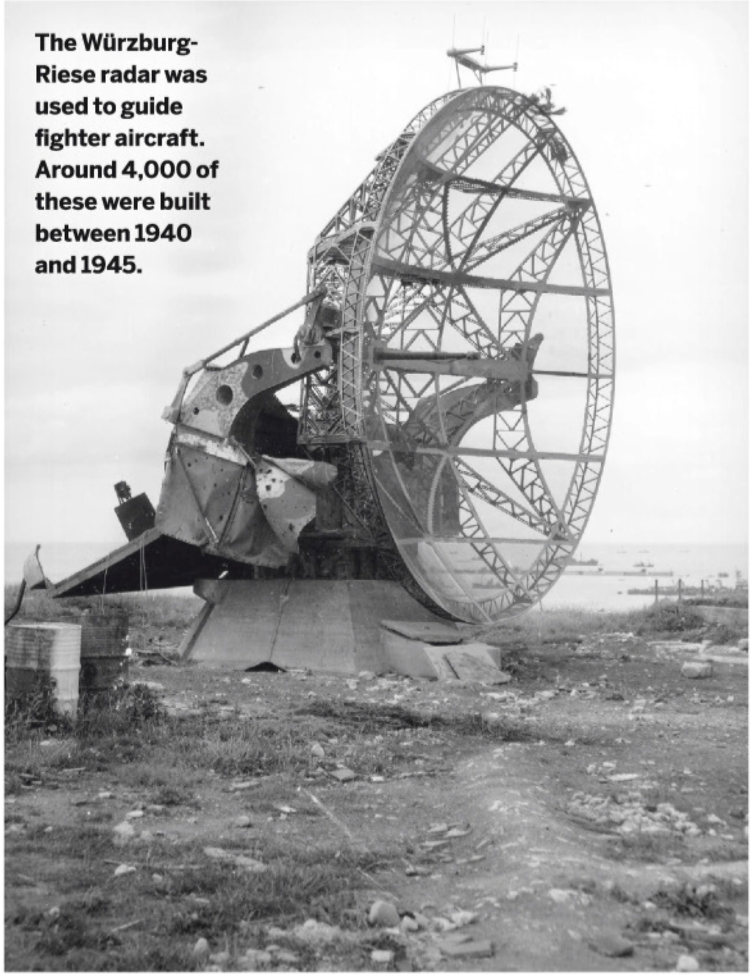
German pilot Heinz-Wolfgang Schnaufer in a Bf 110 during an attack on a British Lancaster bomber.

On the evening of 30th March 1944, 785 heavy bombers – almost the entire British bomber force – gathered in the air over eastern England. Their mission: to wipe Nuremberg, the Nazi Party capital, off the map.

But in the skies over mainland Europe, Bomber Command's enemy, the German night fighter, awaited. The first bomber was shot down as soon as the British planes flew in over the German-Belgian border. The glow of the burning fuel attracted more German night fighters like moths to a flame.

It was 00.20 when Lieutenant Martin Becker of *Nachtjagdgeschwader* 6 (Night Fighter Squadron 6) sighted a Halifax bomber in the darkness ahead. To avoid being spotted by the rear gunner, Becker manoeuvred his twin-engine Bf 110 parallel to the bomber, and only then did he drop down below the enemy aircraft. Once there, Becker let the bomber fly straight into the deadly fire from his automatic guns. The Halifax went down in flames. None of the occupants survived.

Three minutes later, the next bomber fell to Becker's guns. He then had to search for ten minutes before victim number three went down. Numbers four and five followed in quick succession. After number six – another Halifax – Becker returned to base to refuel and replenish his ammunition. He was then able to shoot down a seventh British bomber.



The Würzburg-Riese radar was used to guide fighter aircraft. Around 4,000 of these were built between 1940 and 1945.

NATIONAL ARCHIVES, US

ONE OF THE participating British airmen, Lieutenant C E Willis, remembered that night of horror: "No matter in which direction I looked, I could see tracer fire and balls of flame falling."

In the hour it took the British planes to get from the German border to Nuremberg, 79 four-engine bombers were shot down. By then, the survivors were so shaken that their bombs fell over a huge area across the city and the surrounding countryside. In Nuremberg itself, 256 buildings were destroyed and 75 civilians killed.

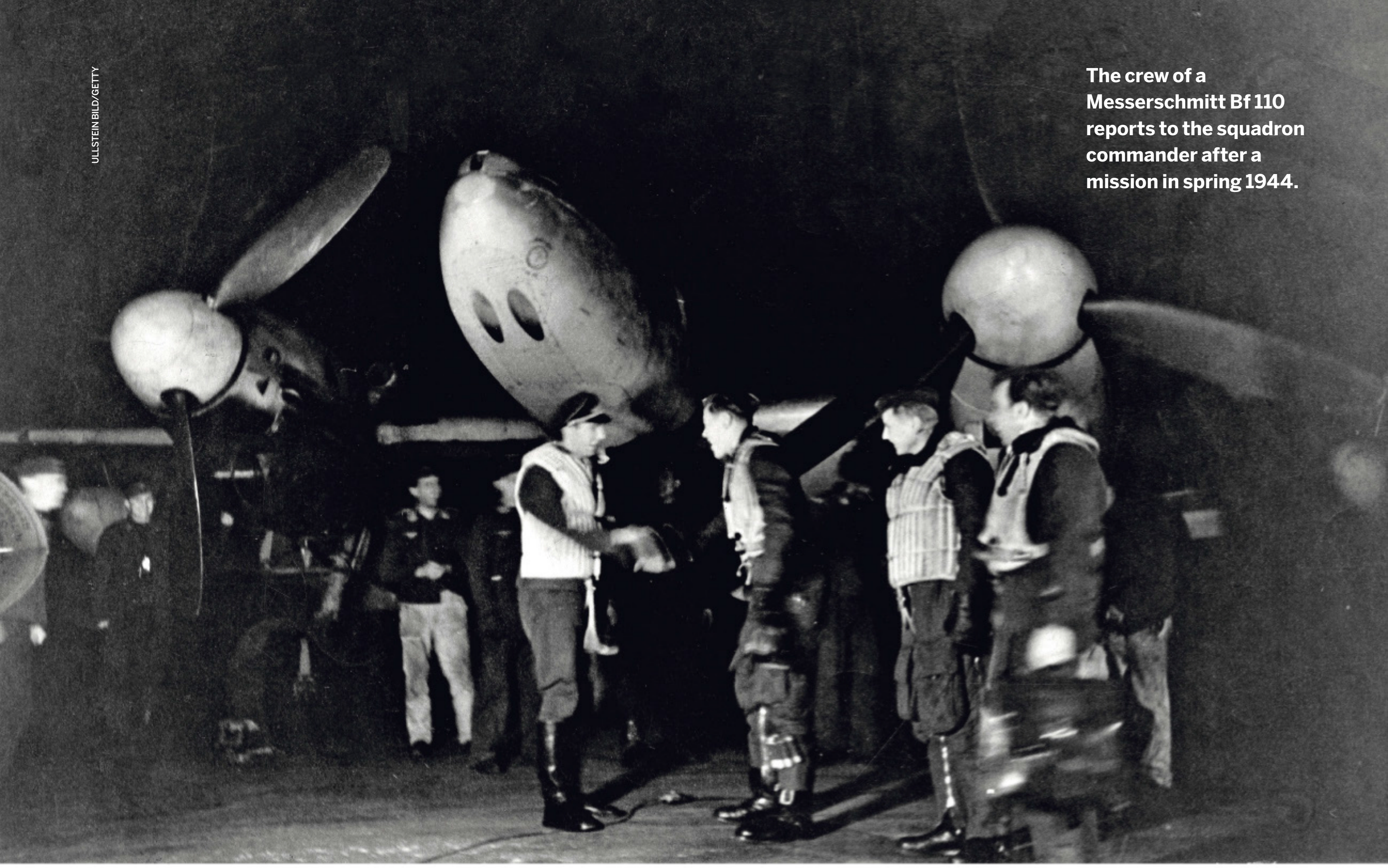
When the last bombers returned to their bases in the early hours of 31st March 1944 and the totals were tallied, 108 bombers had been lost and another 70 damaged. In the space of a few hours, a quarter of Britain's bombers had been put out of action. With the downed aircraft, 545 crew members were killed and a further 159 taken into German captivity. The German night fighters recorded just six of their own aircraft lost in combat.

It was a battle that tore the entire British bombing strategy to shreds. Since the start of the Battle of Berlin in November 1943 – which those in charge had hoped would be the decisive bombing offensive – RAF Bomber Command had lost 1,047 bombers in combat. A further 1,682 had been badly damaged. In other words, Bomber Command had had to renew its entire aircraft fleet three times in the space of just over four months. Personnel losses totalled around 8,000 airmen.

The bombing offensive that was supposed to have won the war and saved the Allies a costly invasion of the continent had failed completely, and the independent bomber force was now subordinated to the invasion plan.

THE GERMAN NIGHT fighters that had dealt out this defeat on Bomber Command had been an elite force in every respect since their inception. But when World War II broke out, the Luftwaffe only had a small and underdeveloped experimental night fighter unit. It was deployed against Bomber Command, which after the first months of the war operated mainly at night – darkness had proved to be the best defence for the bombers. Since May 1940, regular attacks were made on industrial targets in western Germany, but due to inadequate equipment for navigating in the dark, they'd only inflicted limited damage.

While the Battle of Britain raged in the summer of 1940, Bomber Command and the German night



ULLSTEIN BILD/GETTY

The crew of a Messerschmitt Bf 110 reports to the squadron commander after a mission in spring 1944.

fighters fought a rather low-key war. British losses were about as minimal as the damage the bombs inflicted on Germany. But the attacks were protracted and psychologically painful. A critical point was reached when, during a state visit to Berlin in August, Soviet Minister of Foreign Affairs Molotov was forced to flee into a bomb shelter. His acid remark humiliated the Nazi leadership: now the national capital was also being bombed!

Luftwaffe Commander-in-Chief Hermann Göring immediately decided to withdraw a large part of the fighter fleet from the English Channel in favour of night fighters. The twin-engine Messerschmitt Bf 110 became an excellent night fighter with its powerful weapons and impressive range.

The German night fighters were not initially equipped with radar, but their commander, General Josef Kammhuber, built a 1,000-kilometre defence line with anti-aircraft searchlights from Denmark to southern France. This was divided into several zones, with two night fighter aircraft operating in each, guided by radio via a radar station on the ground. As the aircraft industry failed to produce the required number of Bf 110s, the Germans also converted some twin-engine bombers into night fighters, the most successful of which was the Junkers Ju 88..

By the end of 1941, Bomber Command was in deep crisis, with 80 percent of the bombers sent against Germany dropping their bombs more than seven kilometres from the target area. Meanwhile, losses rose steeply. In November 1941, on average a British bomber pilot could expect to be shot down after only 15 missions – the equivalent of four weeks' service.

German night fighters, which by this time had 350 crews and aircraft, were further improved in early 1942 when the first radar systems were fitted to the planes. It was clear to the British that something had to be done.

> **“THE GERMANS ALSO CONVERTED SOME TWIN-ENGINE BOMBERS INTO NIGHT FIGHTERS.”**

THE TURNING POINT came in February 1942 when Air Chief Marshal Arthur Harris took over Bomber Command. Together with Winston Churchill and his technical advisor Frederick Lindemann, Harris outlined an entirely new approach to bombing warfare: instead of trying to hit small targets such as factories or military installations, bombers would be used to break German morale. The concept was called area bombing, where all bombs would be directed at German city centres. The loads were also changed to use incendiary bombs. These caused the most damage in densely populated areas, and the large ►

Night fighter flying ace

★ Some of German night fighter aviation's first flying aces came from the day fighter squadron ZG 76, which in September 1940 became the Luftwaffe's first fighter squadron to achieve its 500th air victory. These include Hans-Joachim Jabs, who won 19 air victories with his Bf 110 as a day fighter pilot and added another 31 as a night fighter pilot, and Wilhelm Herget, who had 15 air victories when he switched to night fighters, and then added a further 58.

Helmut Lent, who went on to become the night fighters' leading ace, also came from ZG 76, where he won eight aerial victories. When Lent died in a plane crash on 5th October 1944, he had topped the list of German night fighter aces with 113 confirmed air victories.

Lent's achievement was surpassed by Heinz-Wolfgang Schnaufer, however, who belonged to the new generation that came directly to night fighter flying. Schnaufer was only 19 years old when he was assigned as a pilot to the NJG 1 night fighter squadron in 1941. By the end of the war, he had shot down 121 British bombers in 164 combat flights.

The nine air victories won by Martin Becker on the night of 14th-15th March 1945 were the individual record for a single night. Becker ended the war with a total of 58 kills.

BUNDESARCHIV

Helmut Lent.

BUNDESARCHIV, BILD 101I-492-3347-025/GÜNTZEL/CC-BY-SA 3.0

A Messerschmitt Bf 110 with Lichtenstein radar in France in 1944.

Night navigation

★ With radar, German ground commanders could guide night fighters towards bombers by radio. However, radar was not precise enough to help aircraft crews visually locate targets for an attack. If there were searchlights in the target area, they could help with night hunting, as long as it wasn't too cloudy.

In 1942, the Lichtenstein B/C radar was introduced and fitted to aircraft. This had a short range but made it easier for aircraft crews to detect bombers in the target area.

fires also helped subsequent British bombers to find their targets.

The plan called for Bomber Command to be expanded to 10,000 heavy bombers by mid-1943, and these would destroy Germany's 58 largest cities by April 1944. It was hoped that this would break the German population's will and force the country to surrender. This may seem somewhat optimistic given that Bomber Command only had around 500 bombers at the time, but when Harris took office, the units began to be equipped with the new four-engine Avro Lancaster heavy bomber, capable of carrying six tonnes of bombs. In addition, in March 1942, Bomber Command began using a new navigation system, Gee, which guided the bombers to their target areas electronically.

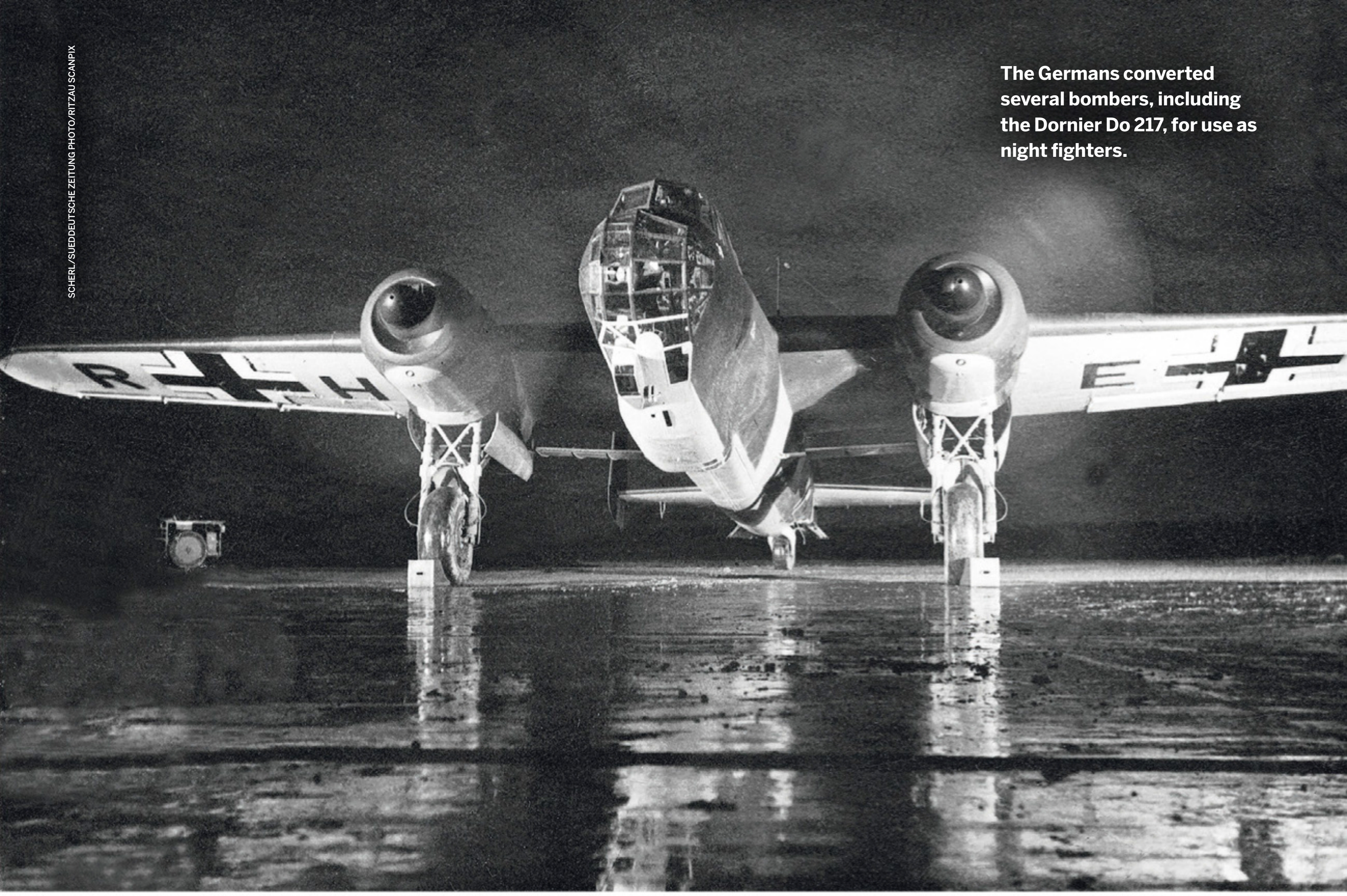
The strategic bombing began on the night of 29th March 1942, when 234 British bombers dropped 400 tonnes of bombs, two-thirds of which were incendiary, on the city centre of Lübeck, which was almost completely burnt out.

THE ATTACK CAME as a complete shock to the Germans. Not only had the British succeeded in destroying a German city centre for the first time, but Britain's losses numbered just 12 bombers. The British now adopted a new tactic, the bomber stream, which involved flying all the bombers in one long line over the same area, crossing only a few German night hunting zones.

And Harris had another shock in store for the Germans. At the end of May 1942, he scraped together all the available aircraft from RAF Coastal Command, Middle East Command and other divisions, and assembled 5,000 airmen and 1,046 aircraft, which were deployed against Cologne on the night of 31st May in the first thousand-plane attack in the history of the war. These produced 12,000 fires that developed into 1,700 infernos within Cologne. As the bombers flew back home, they could see the glow from 250 kilometres away.

However, it would be some time before Bomber Command could repeat the triumph. Meanwhile, the German night fighters improved their methods considerably. Thanks to the *Y-Gerät* (Y-device) – an electronic navigation system – commanders on the ground were able to guide several night fighters towards British bombers that had been detected by ground radar. Once the night fighters were within three kilometres of the bomber, the radar operator in the aircraft could spot the opponent on his own screen. With this new tactic, the German night fighters' success increased once again.

In June 1942, all previous Bomber Command loss records were broken: 212 bombers, about 40 percent of the entire fleet, were lost. To make matters worse, the crisis in the North African theatre of



SCHERL/SUEDDEUTSCHE ZEITUNG PHOTO/RITZAU SCANPIX

The Germans converted several bombers, including the Dornier Do 217, for use as night fighters.

war meant that Harris was forced to hand bombers over to the Middle East Command. Contrary to the promised radical increase in strength, Bomber Command under Air Marshal Harris's first eight months as commander shrank from 518 bombers to just over 300. On top of that, the Germans had learned how to jam the radio signals used by the British Gee navigation system.

THE GERMAN NIGHT fighters had now crystallised into a nucleus of extremely skilled aces who took an increasing toll on the British bombers. Of the total 1,150 air victories recorded by night fighters up to the end of 1942, a top tier of pilots consisting of just six flying aces – each with more than 35 victories to their personal credit – accounted for almost a quarter. The most successful of these was 24-year-old Captain Helmut Lent, who by the end of 1942 was credited with 57 air victories.

But Bomber Command also had its aces, and in the autumn of 1942, many of them were brought together to form a special Pathfinder group, whose task was to find targets and mark them with flares for the main force.

During the following winter, the British finally caught up with the Germans in the electronics race. Two new technical aids were brought into use by Bomber Command: Oboe, an improved electronic navigational aid that couldn't be interfered with by German countermeasures; and H2S, a radar system that was fitted to bombers to help them identify their targets.

"IN JUNE 1942, ALL PREVIOUS BOMBER COMMAND LOSS RECORDS WERE BROKEN."

Bomber Command was expanded to 800 bombers in the spring of 1943, and with this force Harris launched a concentrated bombing offensive against the industrial cities of the Ruhr valley. The Battle of the Ruhr began with an attack on Essen on the night of 5th March. This was the beginning of a four-month-long furious battle between Bomber Command and the German night fighters. Cities such as Düsseldorf, Essen, Wuppertal and Duisburg were reduced to rubble and ash. Meanwhile, the German night fighters inflicted terrible damage on the participating bombers. US radio correspondent Ed Murrow of CBS reported in horror: "Men die in the sky while others are roasted alive in their cellars."

Not many British bomber aircraft survived this period. Between March and June 1943, almost one ▶

► thousand bombers were lost in operations against Germany. This equated to a loss of nearly seven thousand air crew.

Hundreds of thousands of people were made homeless in the bombed cities, but the desired effect on morale did not materialise. Casualties were also relatively limited. In the worst incident, 2,700 people were killed when Wuppertal was bombed on the night of 25th June. But otherwise, Essen with 482 deaths on 5th March and Duisburg with 240 deaths on 13th May were more typical results. These figures are, of course, awful in themselves, but to achieve the effect on morale that Harris and Lindemann had intended would have required far more casualties. When the British cancelled the Battle of the Ruhr, the German night fighters could claim victory. Arthur Harris, however, was not ready to give up.

ON THE EVENING of 24th July 1943, the German night fighters were put on alert. Intelligence warned of another major approach by enemy bombers. This was to be the biggest operation of Bombing Command to date. Nearly 800 bombers carried 2,400 tonnes of bombs – 70 percent more than during the thousand-plane attack on Cologne. Just as the night fighters were about to be guided towards the bombers, white dots filled the German radar screens. What German technicians had feared for a long time had happened: the British had dropped hundreds of thousands of aluminium foil strips that filled the German radar screens to such as extent that the bombers themselves became invisible.

The target of the attack was Hamburg, a city of millions whose location on the River Elbe made it easy to locate with H2S radar. Undisturbed by German night fighters, the British aircraft made their way over the city and carried out the most concentrated bombing raid of the war so far. The fires in the centre of Hamburg were so extensive that they formed a firestorm – that is, the huge fires consumed oxygen with such force that gusts of wind were created. Virtually all of Hamburg was destroyed in a single night. Between 30,000 and 40,000 people died.

Arthur Harris was never closer to achieving his goal. In his memoirs, German General Adolf Galland described the awful effect the bombing of Hamburg had on German morale:

“The glow of fires could be seen for days from a distance of 120 miles. A stream of haggard, terrified refugees flowed into the neighbouring provinces. In every large town, people said: ‘What happened in Hamburg yesterday can happen to us tomorrow.’ Berlin was evacuated with signs of panic ... Psychologically the war at the moment had perhaps reached its most critical point ... In the wide circle of the political and the military command could be heard the words: ‘The war is lost!’”

> “AT THE END OF WWII, GERMANY HAD MORE AND BETTER NIGHT FIGHTERS THAN EVER BEFORE.”

THE BOMBING OF Hamburg provided clear evidence that the tactic that Harris and Lindemann were using, however inhuman it may have seemed, was viable.

But the effect on German morale achieved at Hamburg was to be a one-off, for two reasons. Firstly, Bomber Command was never given the priority in the British war effort that the plan required, with the bombers never reaching more than ten percent of the desired numbers. The second reason was that the German night fighters were able to adapt rapidly to new conditions.

The Germans responded to the British use of aluminium strips with two new tactical approaches. When 700 British bombers flew into Berlin on the night of 24th August 1943, German night fighters were waiting high above the city. The air defence system had been ordered to limit its fire to lower altitudes. The bombers coming in over the city stood out clearly in the light of the many anti-aircraft searchlights, and the night fighters went into action. In a ferocious air battle in which the Germans deployed both twin-engine night fighters and single-engine day fighters, 57 four-engine British bombers were shot down. The Germans themselves lost only three Bf 110s. This tactic was known as wild boar (*Wilde Sau*). It had been suggested by Major Hajo Herrmann, a bomber pilot, and Hermann Göring immediately embraced the idea.

When the British attempted another attack on Berlin four nights later, the Germans countered with a new night hunting tactic, the tame boar (*Zahme Sau*). This involved German night fighters that had managed to locate bombers following them for as long as possible and calling other fighter aircraft by radio. This would prove to be the perfect approach to tackling the British tactic of flying as a stream of bombers.

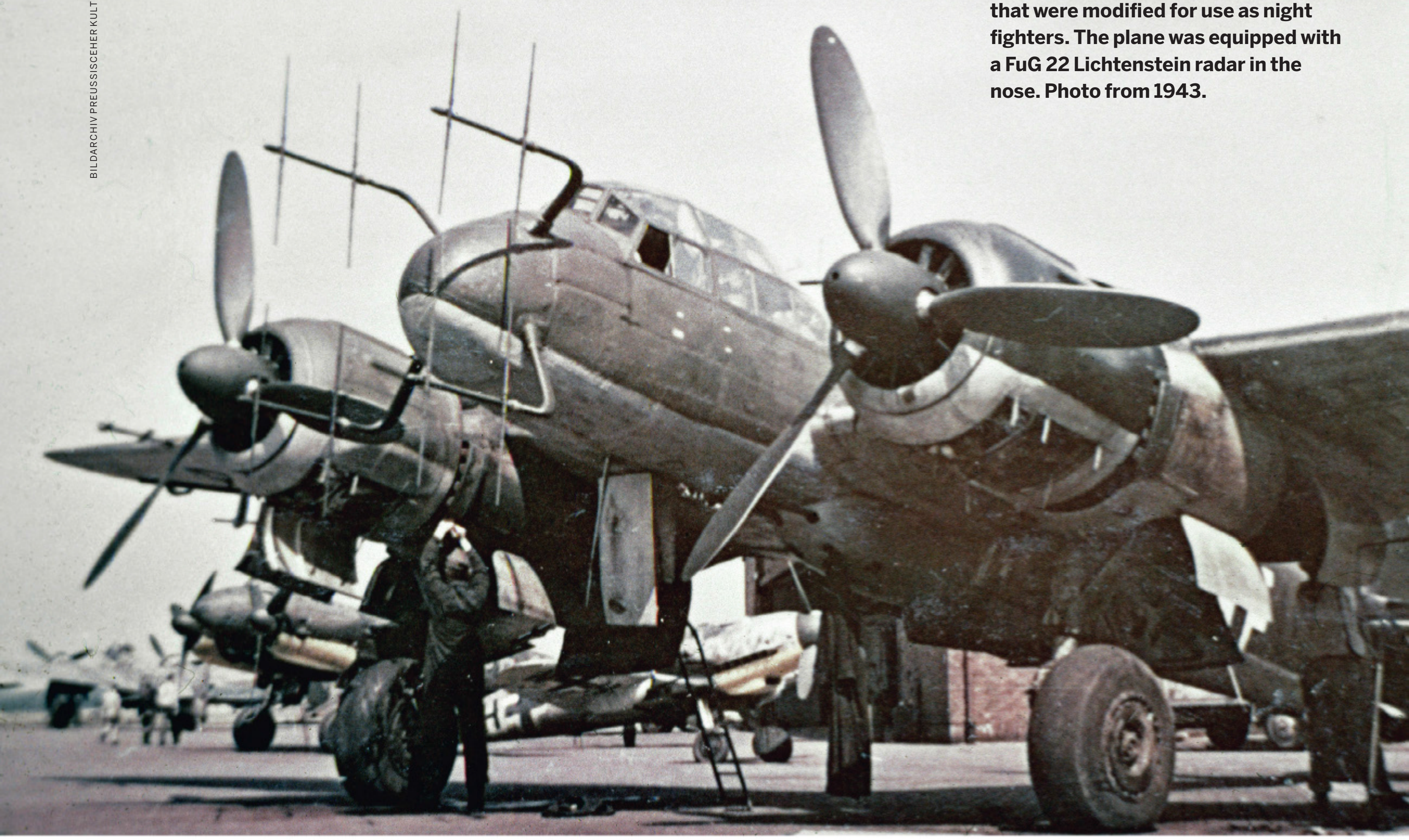
With the wild and tame boar strategies, combined with an increase in the number of night fighters to 600 aircraft, and new and improved technology (such as the Lichtenstein SN-2 aircraft radar with a range of nearly eight kilometres), German night fighters were able to transform the Battle of Berlin

★ **FACTS**

BOMBING WAR IN FIGURES

The bombing campaign against Germany during World War II resulted in more than half a million civilian casualties. In total, British bombers dropped 955,000 tonnes of bombs on Germany and 7.5 million people were made homeless. Bomber Command lost 12,330 aircraft. Out of a total of 125,000 Bomber Command airmen, 55,500 were killed and a further 8,403 were wounded and 9,838 became prisoners of war. On average, an airman in Bomber Command had a 27 percent chance of surviving being shot down. The chance of being killed was 55 percent.

BILDARCHIV PREUSSISCEHER KULTURBESITZ



The Junkers Ju 88 became the most successful of the bomber aircraft that were modified for use as night fighters. The plane was equipped with a FuG 22 Lichtenstein radar in the nose. Photo from 1943.

in the winter and spring of 1943-44 into a decisive British defeat.

By focusing on Berlin from November 1943, Arthur Harris hoped to repeat what had been achieved in Hamburg. But while the German capital certainly suffered widespread devastation, it was a far cry from what had happened in Hamburg. Instead, it was a defeat for Bomber Command.

THE DISASTER DURING the Nuremberg raids in March 1944, described earlier, was followed by more than four months of bombing military targets in France, where the Germans had relatively few night fighters. It was a welcome respite for Bomber Command, which saw its loss ratio fall below two percent by August 1944.

When Harris was authorised to resume the bombing offensive against Germany in September 1944, the war against the Nazi night fighters was largely won. Not by the airmen, however, but by British electronics researchers. They succeeded in developing methods to disrupt every German radar system, leaving the field clear for British bombers.

German night fighters remained undefeated in combat, but could only watch helplessly as Bomber Command destroyed German cities in the last months of the war with an efficiency that, with the exception of Hamburg, had never been seen before. The climax was reached with the destruction of Dresden in February 1945.

At the end of World War II, Germany had more and better night fighters than ever before, but most of them were unable to get airborne due to fuel shortages, and those that could take off flew with the same uncertainty through the darkness as the first night fighter pilots had done at the beginning of the war. In the end, only the most skilful flying aces were able to achieve any results. Martin Becker scored one last major success on the night of 15th March 1945, when he and his rear gunner Karl Johanssen shot down nine Lancaster bombers.

As an expression of the respect the British had for German night fighters, after the end of the war they removed a tail fin from the Bf 110 flown by the top night fighter ace, Heinz-Wolfgang Schnaufer. The fin was taken to the Imperial War Museum in London, where it is still on public display. Every day, astonished visitors count the tally marks of Schnaufer’s 121 victories that have adorned the fin since 1945. ✪

Christer Bergström has written some 20 books on World War II.

Ju 87 Stuka

FLYING ARTILLERY

When the artillery failed to keep pace with Hitler's panzer divisions, it fell to the Luftwaffe to pave the way. Germany's infamous dive bombers played a crucial role in clearing the ground.

Text **RASMUS KJÆRBYE PETERSEN**

Stuka planes return from a mission on the Eastern Front, 1942.

ULLSTEINBILD/GETTY

Around 1930, the German *Reichswehr* – Realm Defence – started performing test flights with dive bombers at its secret base in Lipetsk in the Soviet Union. It used two-seater Junkers K 47 fighter planes that had been developed under Hermann Pohlmann's direction in the late 1920s.

The army wanted to find out if dive bombing was a practical way to increase the precision of bomb attacks, or whether the unique demands placed on both aircraft and pilot were too severe. The experiments with the K 47 provided no definitive answers, but they were satisfactory enough to convince the Reichswehr to finance further tests with both this and other types of aircraft.

When the Nazis came to power in 1933, they immediately enacted measures to build a new air force under the command of veteran pilot and high-ranking Nazi Hermann Göring. Göring brought in specialists, including staff officer Walther Wever and industrialist Erhard Milch.

Wever and Milch began to develop specific military and industrial plans to facilitate the air force's reconstruction. Over the long term, Wever equipped the future Luftwaffe with specialised bombers tailored to either tactical or strategic missions. In the short term, it was necessary to quickly establish an air force that would serve as a deterrent to neighbours France and Poland, who might be tempted to attack during Germany's military build-up. Milch also knew it would require years of industrial development before Germany could mass-produce large, multi-engine planes.

Dive bombers offered the perfect temporary fix for both Wever and Milch. These single-engine aircraft were relatively small and cheap to produce, and so wouldn't make excessive demands on German manufacturers. The plane's superior precision also made it better value for money – one could get the same results with fewer aircraft and bombs.

The plane's short range meant that it could only be used in tactical operations, but this wasn't considered a problem, because it was designed to be used as part of a defensive strategy– in other words, a dive bomber could be the answer to Germany's short-term aims, provided it worked as planned.

“IT WAS LOVE AT FIRST SIGHT WHEN ERNST UDET SAW JUNKERS' PLANNED DIVE BOMBER, THE JU 87”

In September 1933, Junkers received an order to produce a dive bomber prototype based on its K 47 model. At the same time, the armed forces ordered a more conventional bomber from rival manufacturer Heinkel. Göring was aware he needed Wever's and Milch's expertise, but this fact also left him uneasy. He preferred to surround himself with staff who were personally loyal and never opposed him, which is why Göring began bringing old friends and colleagues into the Luftwaffe.

One of these was Ernst Udet. He was a veteran of Jagdgeschwader 1, the ‘Red Baron’ Manfred von Richthofen's famous fighter wing during World War I, which Göring had commanded in the last months of the war. Udet was almost entirely disinterested in politics and had become well known throughout the interwar period as an international stunt pilot, barnstormer and playboy.

During one of his trips to the US, Udet took in a show featuring the one-of-a-kind Curtiss 1A ‘Gulfhawk’ plane. He was extremely impressed with its aerobatic abilities. US aircraft engineers and the military were among the most enthusiastic proponents of dive bombing, and adrenaline junkie Udet was quickly seduced by the Gulfhawk's capabilities.

“ITS LOW SPEED ALSO MADE THE PLANE AN EASY TARGET FOR ENEMY FIGHTERS”

In 1933, Udet was called back to Germany by Göring. The Luftwaffe boss wanted him to become a member of the Nazi Party and contribute to the German air force’s reconstruction. Udet agreed, but only on the condition that Göring bought two Curtiss F11C Goshawks, the export model closest to the Gulfhawk.

In May 1934, Udet invited Wever and several other officers to the artillery range at Jüterbog to demonstrate the Goshawk’s capabilities as a dive bomber. He took his place in the pilot’s seat, soared into the air and then performed a steep dive from an altitude of one thousand metres. He was determined to succeed with his first attempt, so waited until he was just one hundred metres from the ground before releasing his bomb. The bomb hit the target, but it was only with difficulty that Udet managed to pull up the Goshawk before it did the same.

Wever was not overly impressed. He already knew that dive bombing was a more precise form of bombing, while Udet’s escapades merely confirmed his misgivings. He commented that they couldn’t possibly expect the same nerveless and highly skilled performance from average pilots. The Luftwaffe required aircraft that everyone could learn to fly.

This rejection, wrapped up in flattery, did not upset the pilot. In fact, it was love at first sight when Ernst Udet saw Junkers’ planned dive bomber, the Ju 87. From then on, the WWI ace became its principal supporter until his death.

Hitler hadn’t officially rejected the Treaty of Versailles at that time, so the Ju 87 couldn’t be constructed in Germany. The first prototype, like its predecessor, the K 47, was built in Sweden, specifically in Malmö, by a subsidiary of Junkers, AB Flygindustri.

Hermann Pohlmann came up with the plane’s design and, unsurprisingly, he was influenced by his experience designing and building the K 47. The brief demanded that the Ju 87 be simple to build, yet robust – examples of this included the fixed undercarriage to avoid potential issues with retractable landing gear.

A fixed undercarriage brought its own problems, however, including increased air resistance. Pohlmann solved this in two ways. First, the undercarriage and wheels were fitted with aerodynamic ‘spats’, and second, the undercarriage’s height was made as short as possible by ‘folding down’ the wings over the wheels. This inverted gull wing design, helped improve the pilot’s view and became one of the Ju 87’s most striking features.

Another detail that Pohlmann took from the K 47 was Junkers’ distinctive *doppelflügel* (double-wing) construction. This used full-span ailerons hinged just below the trailing edge of the wing. They were supported by flaps divided into three sections to increase the plane’s lift capabilities at low speed.

There were also dive brakes fitted under each wing to help maintain a constant speed during the plane’s dive. Pohlmann’s original Ju 87 design also had a double vertical stabiliser – again, like the K 47 – to give the rear gunner a better field of fire.

There was one area where Pohlmann ignored the brief to simplify everything as much as possible. The same doubts that Wever had expressed in Jüterbog led him to introduce an automated system to take control of the plane’s dive, pulling it up automatically when it dropped below a certain height. It meant this previously dangerous manoeuvre was no longer the pilot’s concern. Instead, he could focus entirely on his target.

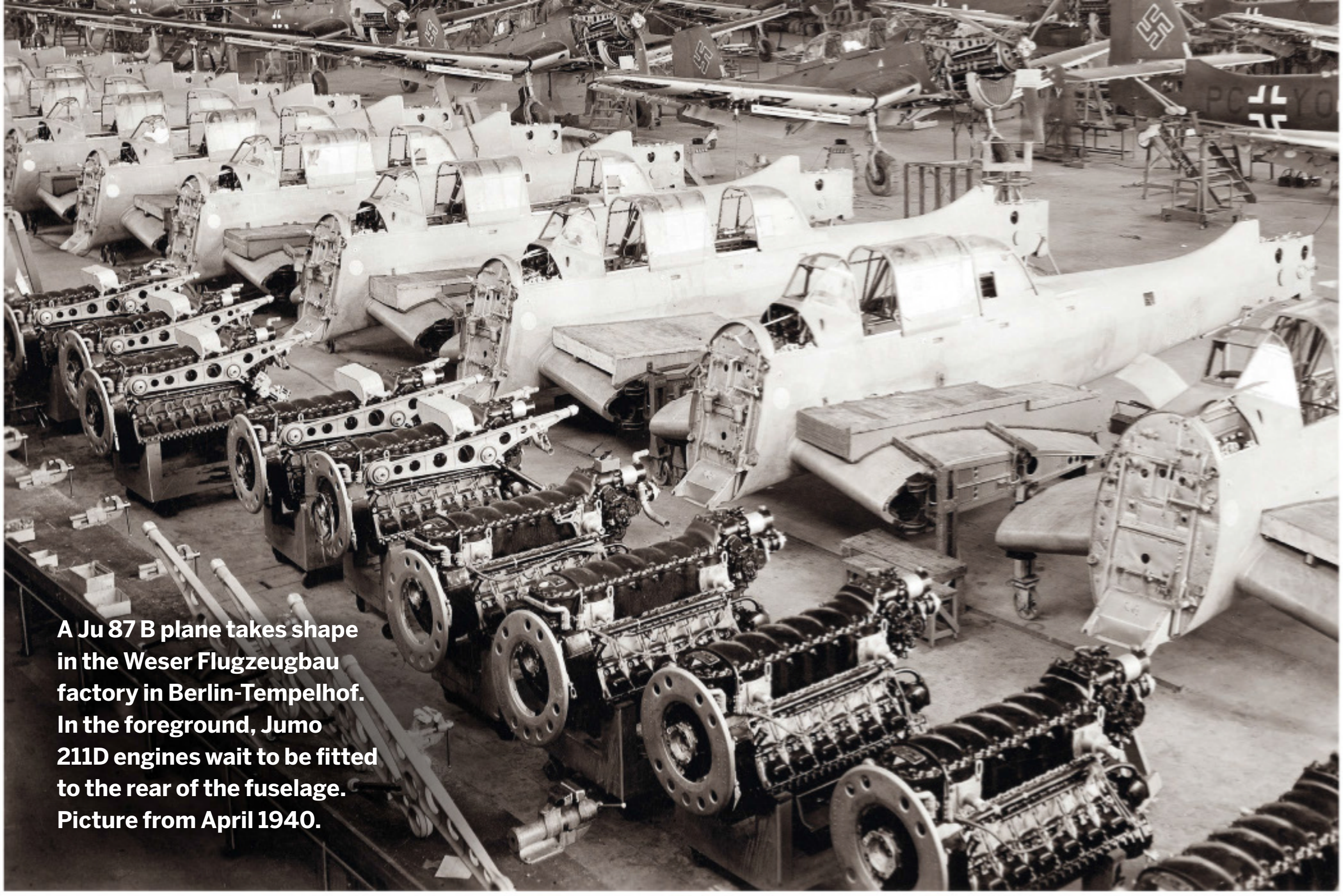
The first Ju 87 prototype had already been transported secretly to Germany before the end of 1934. There were doubts about the fuselage’s durability, though – it had to be capable of coping with a 90-degree dive, so the following year was spent reinforcing the plane. It wasn’t until September 1935 that the first test flight was carried out, with WWI ace and test pilot ‘Willy’ Neuenhofen at the controls.

The only problem Neuenhofen reported was that the engine, a Rolls-Royce Kestrel, had overheated because the radiator was too small. It was a concern, though – this was only the first test flight, and the plane hadn’t yet been pushed that hard.

On 24th January 1936, Neuenhofen deliberately forced his Ju 87 into a spin to expose the aircraft to harsh aerodynamic stresses. Concerns over the aircraft’s structural strength were tragically vindicated. The double vertical stabiliser collapsed, the prototype became impossible to control and crashed, killing both Neuenhofen and his mechanic.

Reich Minister of Aviation Hermann Göring (left) in conversation with general and pilot Ernst Udet in 1938.

ULLSTEIN BILD DTL./GETTY



A Ju 87 B plane takes shape in the Weser Flugzeugbau factory in Berlin-Tempelhof. In the foreground, Jumo 211D engines wait to be fitted to the rear of the fuselage. Picture from April 1940.

ULLSTEIN/GETTY

The accident did not help the plane's questionable reputation with the Luftwaffe. Instead, it strengthened staff officers' scepticism towards the whole dive-bombing concept. Its fiercest critic was Wolfram von Richthofen (cousin of the Red Baron), who was responsible for the Luftwaffe's development and purchase of aircraft. Richthofen's prime concern, however, proved not to be the plane's structural integrity, which was solved by Pohlmann switching to a single vertical stabiliser tail for his next prototype, but rather its engine.

The objection was political and stemmed from the fact that the engine was foreign. Junkers resolved this in March 1936 when it installed one of its own 700-hp Jumo 210 engines in the next prototype. But Richthofen believed this – like its predecessor – was too weak. A dive bomber lost a lot of speed after levelling up from its dive and was now close to the ground. If it didn't have enough engine power to rise again quickly, it would be extremely vulnerable to flak from anti-aircraft fire. Its low speed also made the plane an easy target for enemy fighters.

The problem was that, despite the aviation industry's rapid development under Milch's demanding regime, there still weren't enough powerful engines, one of the reasons why Junkers initially used a British model. One of the few potentially suitable engines, the 1,000-hp Daimler-Benz DB 600, was earmarked for other projects, including the Ju 87's competitor from Heinkel, the He 118. On 9th June, the Luftwaffe – on Richthofen's instructions – ordered all work on the Ju 87 cease.

The dive bomber's death sentence proved short-lived. The same day it was issued, Udet took over as head of the Reich Air Ministry's development wing. The following day, the order to halt development on the Ju 87 was rescinded.

Udet's new position was the first step in a wide-ranging overhaul of the Luftwaffe, which had begun after Wever died in a plane crash on 6th June. Göring made sure to move his favourites higher up the command chain, which marginalised more independent officers, such as Richthofen. Udet's favourite project, the Ju 87, benefited from this development. On 27th July, Udet test flew the He 118, which was a fighter-bomber rather than a dive bomber. It wasn't as robust as the Junkers plane, and Ernst Heinkel warned Udet by phone that the propeller was not designed for the speeds attained during steep dives of more than 50 degrees. But on the day of the test, Heinkel was visited by renowned US pilot Charles Lindbergh and was not on site to reiterate his warning to Udet.

The former stunt pilot appeared to forget Heinkel's advice and put the He 118 into a dive so steep that the prototype virtually disintegrated. Udet was able to bail out by parachute but was so upset that there and then he declared the Ju 87 the winner of the competition. After the war, Heinkel claimed ►

Junkers K 47.

BUNDESARCHIV, BILD146-0908-500

Curtiss F11C Goshawk.

HISTORIE ARCHIVE

The Ju 87's predecessors: K 47 and Goshawk.

“STUKAS WERE REQUIRED TO TAKE ON ROLES THEY HADN’T REALLY BEEN DESIGNED FOR”

Two Ju 87 Bs attack a target in France with 250-kg and 50-kg bombs. June 1940.

HUGH W. COWIN AVIATION COLLECTION/RITZAU SCANPIX

► that Udet had deliberately exceeded the aircraft’s limitations.

Udet’s decision didn’t end the criticism from Richthofen and his colleagues. Regular test flights, partly using prototypes and partly with the first pre-production model (the Ju 87 A-0) at the start of 1937 confirmed many of the faults they’d predicted. Disgruntled by the new direction the Luftwaffe had taken – and after months of fruitless discussions with Udet – Richthofen agreed in November 1936 to lead the Condor Legion in Spain. These changes coincided with an evolving view of the Ju 87’s role. The aircraft could now serve as an instrument in Hitler’s increasingly aggressive foreign policy. It was also at this time that the term *Sturzkampfflugzeug* – dive bomber – started to appear. The term should have included all types of dive bombers, but the abbreviation – Stuka – became inextricably linked to the Ju 87.

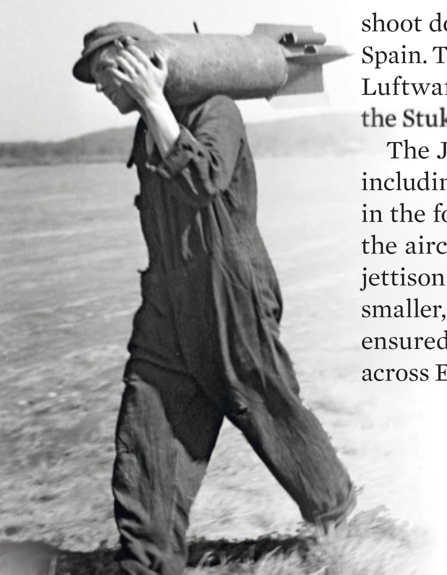
In June 1937, a single Ju 87 A-0 entered Spain disguised as freight. The plane could now be tested in the realistic setting of the country’s civil war. The aircraft was sent back after just over a year, replaced by three Ju 87 A-1s. The feedback from Spain was largely positive, but the plane did reveal further teething problems. For example, the aerodynamic spats were too long. They often dug into the ground when landing on an uneven airfield.

A lack of engine power remained the Ju 87’s biggest problem, however. It could not cope with its planned 500-kg bomb load. Instead of settling for 250 kg, the Condor Legion chose to leave the rear gunner on the ground. This wasn’t a major issue at the time, as the Republicans’ air forces were few in number and badly organised. There were also no air defences to speak of and Republicans failed to shoot down any of the four A models deployed to Spain. This apparent success perhaps helped lull the Luftwaffe into a false sense of security regarding the Stuka’s vulnerability.

The Ju 87 B solved many of the early problems, including the addition of a more powerful engine in the form of the 1,200-hp Jumo 211. This meant the aircraft could carry a full bomb load without jettisoning the rear gunner. The spats were also smaller, which facilitated the Jericho trumpets and ensured their characteristic howl would be heard across Europe’s battlefields.

Ground support carries a 50-kg bomb to a Ju 87 at Immola airport in Finland in June 1944.

SA-KUVA



Meanwhile the army honed its blitzkrieg plans. Horse-drawn artillery wouldn’t be able to keep up with its rapid pace, and would therefore be replaced by Stukas. The Germans developed three types of missions for them to fly:

- Prior to an offensive, all available aircraft would be deployed against specific targets to soften the front and prevent the enemy from assisting its troops there with aircraft, supplies and reinforcements – much like during an initial artillery barrage.
- When the offensive started, *Staffel* units (12-16 planes) would fly as an advance party tasked with reacting swiftly if the enemy attempted to build new defensive positions or launch a counteroffensive.
- *Kette* units (three planes) would operate independently across the battlefield to attack targets or provide close support to ground forces.

Advanced war preparations introduced a new philosophy to the Luftwaffe’s leadership. It demanded that as many aircraft as possible be inserted into the various theatres of war. Stukas, therefore, took on roles the plane hadn’t really been designed for, such as attacking ships. For this purpose, the Ju 87 R (where R stood for *Reichweite* – operational range) was developed. Its extra fuel tanks – both internal and external – were drop tanks, designed to be released when empty. They allowed the plane to operate over large distances at sea or be set against strategic targets on the ground. In order to accommodate the extra fuel tanks, Ju 87 Rs had to settle for a 250-kg bomb load.

The Luftwaffe also started development on the C model, to be deployed on the aircraft carrier *Graf Zeppelin*, which was under construction. This model was fitted with a tailhook for slowing down using arresting wires as well as foldable wings. The plane could carry a bomb or torpedo, but was discontinued as *Graf Zeppelin* was never completed.

Another aspect of the Luftwaffe’s new emphasis on versatility was Udet’s demand that other aircraft models also be able to perform dive-bombing attacks. This even applied to the planned four-engine He 177, which put an end to that project (it eventually saw the light of day as a two-engine bomber). Many other Luftwaffe bombers were forced to fly with spoilers they rarely used.

Article continues on page 56 ►

Poor bombsight led to diving

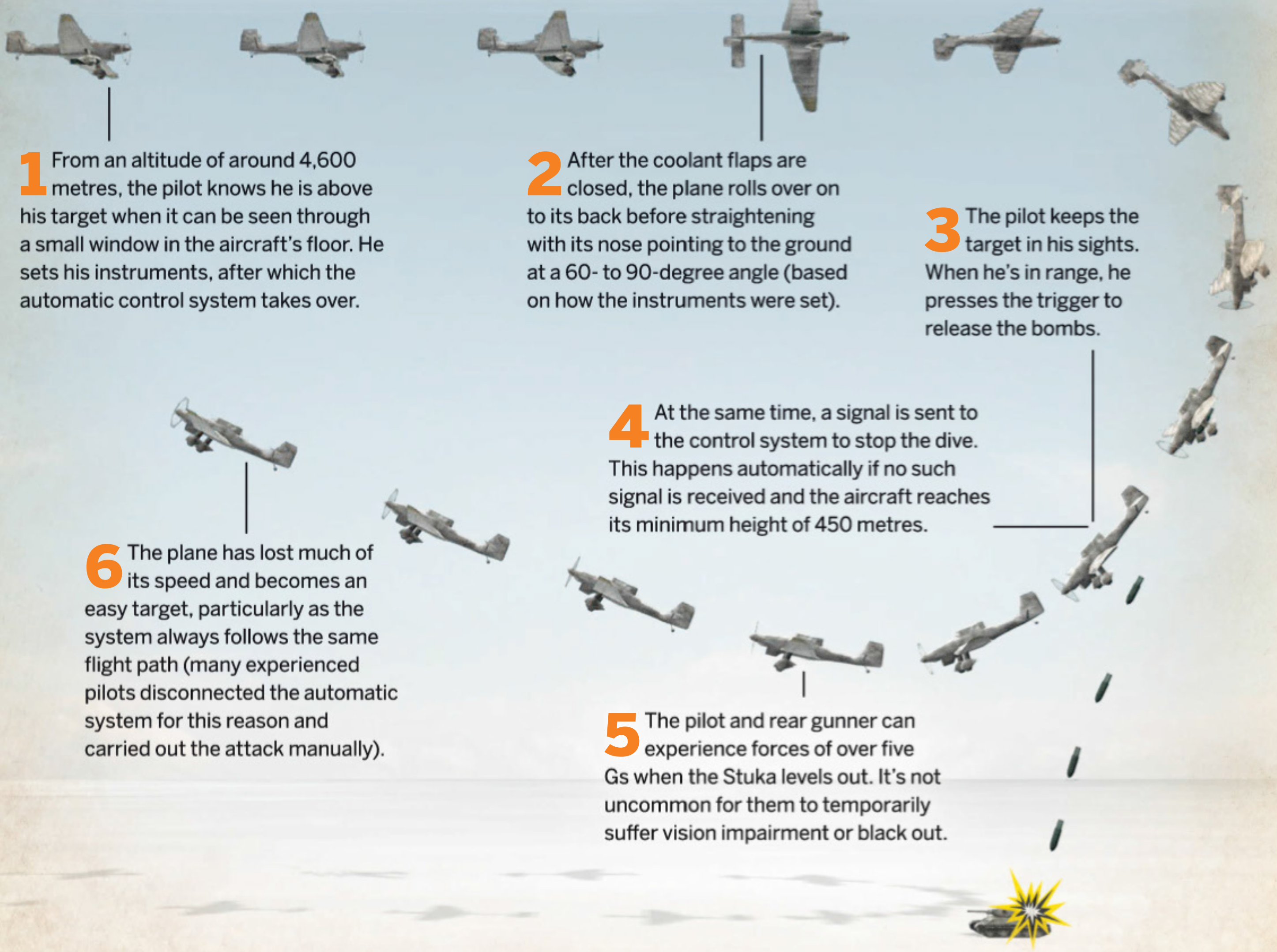
★ During World War I, aircraft pioneers quickly realised that horizontal bombing from high altitude offered no precision. The bomb's drop was determined by both gravity and the plane's speed, which resulted in a parabolic path. There was also the question of air resistance, which was influenced by both the bomb shape as well as the wind speed.

One solution was to develop a better bombsight – basically an analogue computer that took all these factors into account, but this would require both time and money. Another much easier – if unimaginable – solution was to drop the bomb while the plane was in a nose dive. The steeper the dive, the straighter the bomb's path.

This approach required no advanced instruments. During a 90-degree drive, the pilot could aim the bomb using the entire plane, the same technique adopted by fighter pilots with their machine guns. This did subject the wings to huge stresses, however, both during the dive itself and – primarily – when the pilot pulled the plane out of the dive. This excluded multi-engine planes, at least for the most extreme dives, due to the extra weight of their engines on the wings. In the 1920s and 1930s, however, dive bombing was viewed as an attractive alternative to horizontal bombing until better bombsights were developed.

> “DURING A 90-DEGREE DRIVE, THE PILOT COULD AIM THE BOMB USING THE ENTIRE PLANE”

How Stukas attacked



1 From an altitude of around 4,600 metres, the pilot knows he is above his target when it can be seen through a small window in the aircraft's floor. He sets his instruments, after which the automatic control system takes over.

2 After the coolant flaps are closed, the plane rolls over on to its back before straightening with its nose pointing to the ground at a 60- to 90-degree angle (based on how the instruments were set).

3 The pilot keeps the target in his sights. When he's in range, he presses the trigger to release the bombs.

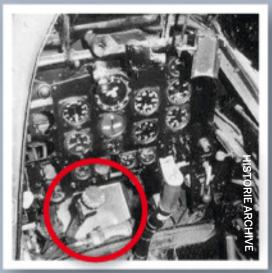
4 At the same time, a signal is sent to the control system to stop the dive. This happens automatically if no such signal is received and the aircraft reaches its minimum height of 450 metres.

5 The pilot and rear gunner can experience forces of over five Gs when the Stuka levels out. It's not uncommon for them to temporarily suffer vision impairment or black out.

6 The plane has lost much of its speed and becomes an easy target, particularly as the system always follows the same flight path (many experienced pilots disconnected the automatic system for this reason and carried out the attack manually).

STUKA

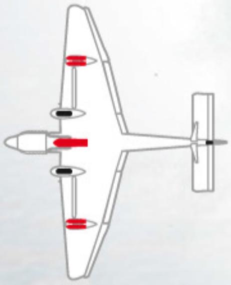
The Junkers Ju 87 received its baptism of fire during the Spanish Civil War in 1937 and remained part of the Luftwaffe until WWII ended. Around 6,500 aircraft were produced.

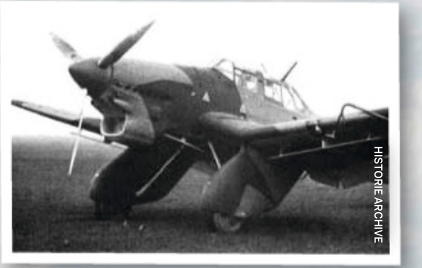

HISTORIE ARCHIVE

Sight The pilot could see the target through a window in the floor. The attack started when the target was within the sight.

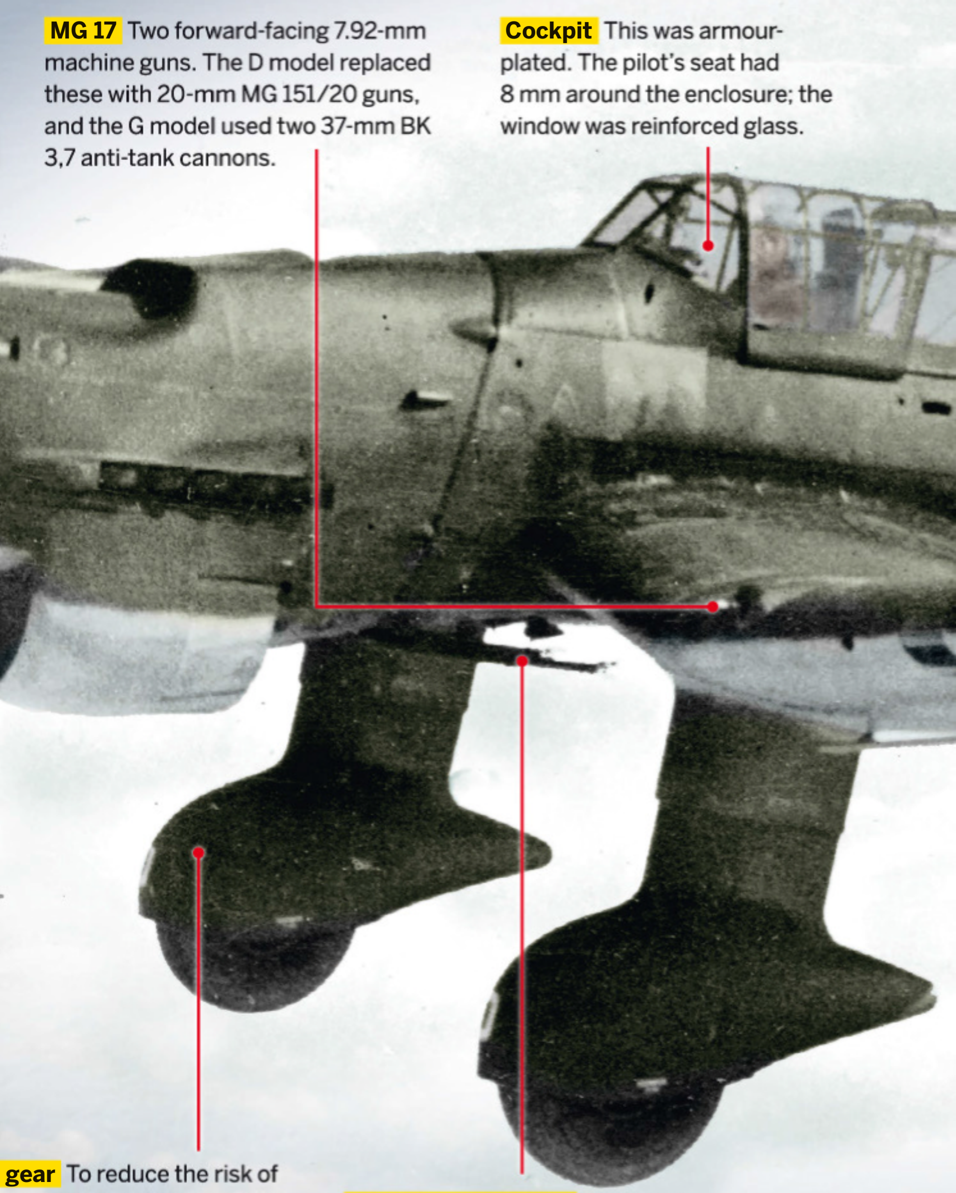
SA-KUVA

Bomb load The Ju 87 B could carry a 500-kg payload – either a single 500-kg bomb, or one 250-kg bomb under the fuselage and four 50-kg bombs beneath the wings. Above, a bomb is attached under the wing.




HISTORIE ARCHIVE

A Ju 87 A with its large spats.

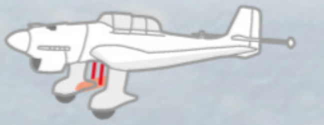


MG 17 Two forward-facing 7.92-mm machine guns. The D model replaced these with 20-mm MG 151/20 guns, and the G model used two 37-mm BK 3,7 anti-tank cannons.

Cockpit This was armour-plated. The pilot's seat had 8 mm around the enclosure; the window was reinforced glass.

Landing gear To reduce the risk of mechanical complications, the gear was fixed. It had streamlined 'spats' to reduce air resistance. These were reduced in size from the Ju 87 B model on.

Release mechanism The main bomb was attached to a release mechanism that swung out so the bomb didn't hit the propellers when it was released.



Sirens were psychological weapon

★ It may have been Ernst Udet – or possibly Hitler himself – who suggested the Ju 87 be equipped with a siren for psychological warfare. During the nose dive, the siren's propellers were driven by the wind, giving rise to a terrifying sound. The Germans dubbed it the Jericho trumpet, after the biblical instruments that caused Jericho's walls to collapse.

At the start of the war, the sirens scared people witless, but eventually the enemy grew accustomed to it. The sirens were then removed because they increased air resistance.

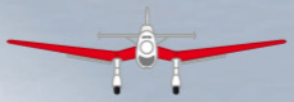
Today, many associate the wail with diving aircraft, even though they don't know where the sound originates.

HISTORIE ARCHIVE

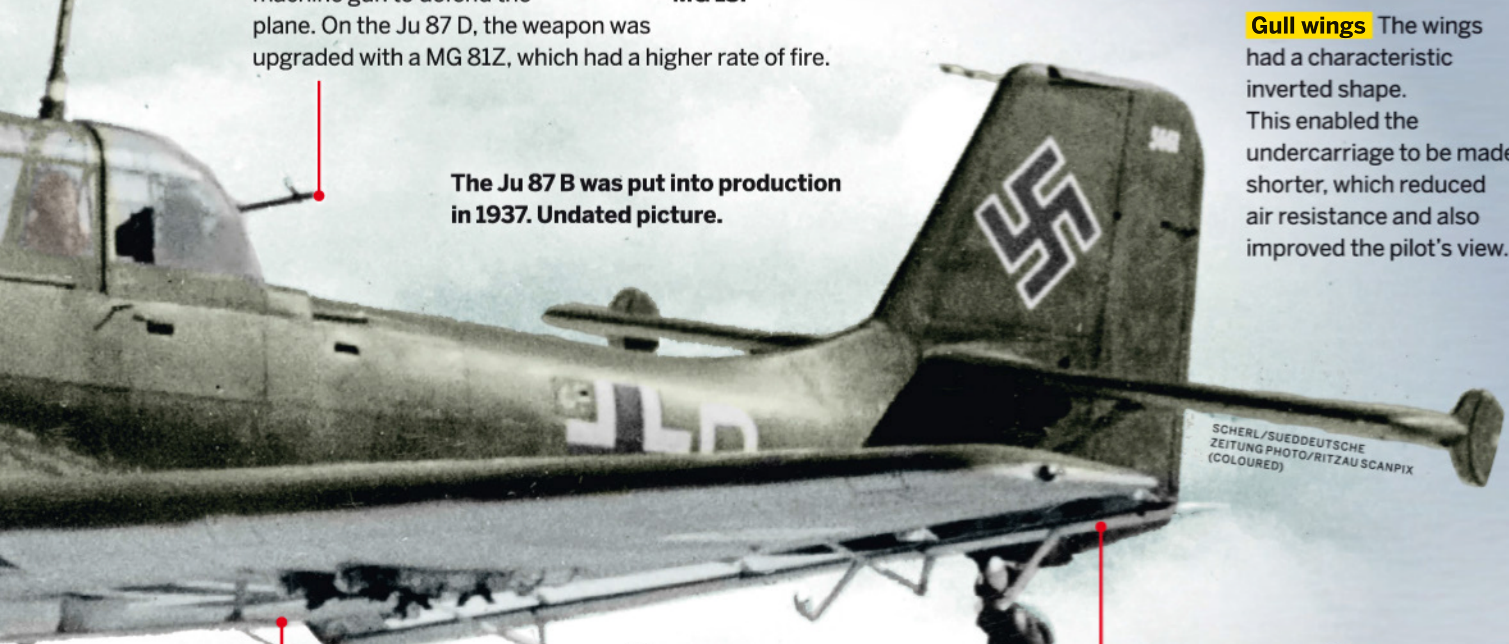
The sirens were mounted on the landing wheels.

MG 15 The rear gunner had a 7.92-mm MG 15 machine gun to defend the plane. On the Ju 87 D, the weapon was upgraded with a MG 81Z, which had a higher rate of fire.

MG 15.



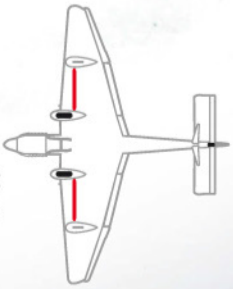
Gull wings The wings had a characteristic inverted shape. This enabled the undercarriage to be made shorter, which reduced air resistance and also improved the pilot's view.



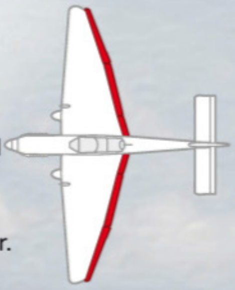
The Ju 87 B was put into production in 1937. Undated picture.

SCHERL/SUEDDEUTSCHE ZEITUNG PHOTO/RITZAU SCANPIX (COLOURED)

Spoiler Air brakes under the wings kept the Stuka's speed at a constant 500-600 km/h as it dived towards its target.



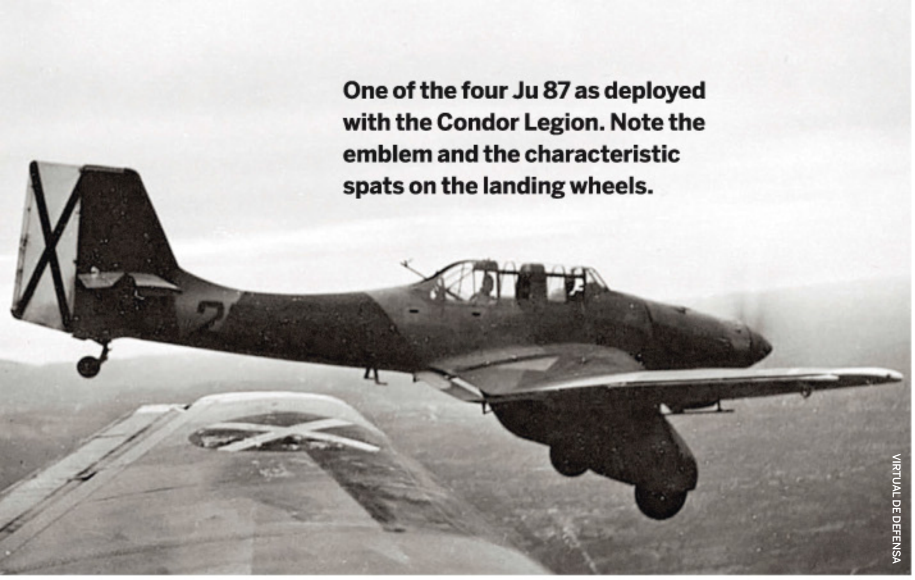
Large rudder The aileron and flaps were exceptionally large and went along the entire wing. The increased lift power enabled the Stuka to pull out of its dive quicker.



Version	Ju 87 A	Ju 87 B	Ju 87 R	Ju 87 C	Ju 87 D	Ju 87 G
Length	10.8 m	11 m	11.1 m	11 m	11.5 m	11.1 m
Height	3.9 m	3.9 m	4.01 m	3.9 m	3.9 m	3.9 m
Wingspan	13.8 m	13.8 m	13.6 m	13.8 m	15 m	15 m
Wing area	31.9 m²	31.9 m²	31.9 m²	31.9 m²	33.6 m²	33.6 m²
Weight (empty)	2,300 kg	2,750 kg	2,750 kg	2,760 kg	3,940 kg	4,400 kg
Weight (full)	3,400 kg	4,250 kg	4,350 kg	5,840 kg	6,600 kg	6,600 kg
Engine	Jumo 210, 12 cylinders	Jumo 211, 12 cylinders	Jumo 211, 12 cylinders	Jumo 211, 12 cylinders	Jumo 211, 12 cylinders	Jumo 211, 12 cylinders
Max speed	320 km/h	380 km/h	340 km/h	332 km/h	400 km/h	344 km/h
Range	1,000 km	500–600 km	1,800 km	580 km	1,000 km	1,000 km

BUNDESARCHIV, BILD 101I-655-5976-04/GROSSE/CC-BY-SA 3.0

Ju 87 G *Kanonenvogel* with its two 37-mm anti-tank cannons.



One of the four Ju 87 as deployed with the Condor Legion. Note the emblem and the characteristic spats on the landing wheels.

VIRTUAL DE DEFENSA

In early 1939, the B model was approved in Spain (although two of five aircraft there were shot down). It went into mass production, which meant 60 aircraft were produced a month in Germany. As a result, more than 300 planes had been built by the outbreak of World War II. When combined with the A model, the Luftwaffe had 360 Ju 87s available. This 'handful' of planes would become legendary.

Although relatively few in number, they achieved results far beyond expectations. This was partly due to their excellent precision as well as the psychological effect they had on soldiers and civilians alike, which was reinforced by the Jericho trumpets. Their howling was enough to trigger panic in both Poland and across Western Europe. The name Stuka became synonymous with the blitzkrieg in Europe's collective consciousness.

German soldiers and civilians alike swallowed the myth of the Stuka's invincibility, too. The Luftwaffe staff, however, could see how the statistics painted a different picture. Yes, the Ju 87 played its role to perfection when it operated under a protective umbrella of fighter aircraft. But its loss figures rose considerably at the slightest resistance or when faced by powerful anti-aircraft defences.

In Poland, Norway and France, the Stuka's vulnerability was partly masked by the fact the Germans quickly attained supremacy in the air, which saw the planes often deployed against targets with little or no air defences. This wasn't the case when the Luftwaffe attempted to break the RAF on its own during the Battle of Britain in 1940, a strategic task to which most German aircraft were poorly suited. Britain's radar network meant its fighter aircraft were rarely avoided, and most targets had anti-aircraft guns.

Its few victories on the ground failed to justify the high loss figures. Perhaps worst of all, the Stuka quickly lost its ability to intimidate. Instead, the plane became almost ridiculous in the eyes of the enemy, as seen by the nicknames it was given: the Spanish called it *Stupido* (stupid), the Soviets *Lopata* (shovel) and the British Sitting Duck or Nazi Hoax. Even the Italians were slightly dismissive, dubbing their own Ju 87 planes *Picchiatello* (slightly crazy or crackpot).

It's often said the plane was a failure during the Battle of Britain, but over six weeks the Germans lost 59 planes, versus 31 aircraft lost during the invasion of Poland. Under the circumstances, this wasn't a major increase. German industry, however, failed to produce new aircraft fast enough to replace the losses, so the air offensive had to be interrupted.

The Ju 87 continued to fly targeted missions across England until September, when Hitler cancelled plans for invading Britain. Large forces were transferred to Poland in advance of the planned invasion of the Soviet Union, but Stukas continued to make smaller, but strategically valuable, attacks on British naval traffic.

The Ju 87 was not seen as a failure inside the Luftwaffe, despite the setbacks over Britain. The Germans simply accepted that there were missions for which the plane wasn't suitable, but the coming war with the Soviets wouldn't be one of them. As a result, Stuka production increased.

Why didn't the Germans attempt to develop a better dive bomber? One key reason was Göring's and Udet's obsession with making all aircraft as versatile as possible. The Stuka's intended successor was the Me 210, which without modification could function in a variety of roles. Although its design had no serious flaws, the demands placed on it probably limited the plane's overall suitability.

In 1941, the Ju 87 D arrived – its standard model now housed extra fuel tanks in line with the R model and a 1,420-hp Jumo 211 engine enabled its bomb load to almost quadruple to 1,800 kg.

Operations in the Balkans, North Africa and the Soviet Union confirmed previous experiences. When the Ju 87's back was covered, the plane guaranteed progress on the ground by clearing the way for armoured forces and by preventing the enemy from launching reprisals.

A Ju 87 bombs British positions at Tobruk during the battle in June 1942. The Allies eventually received better fighters and the Stukas became easy prey.

ULLSTEIN BILD DTL./GETTY

Not even the harsh Russian winter hindered the Stuka to any great extent. It played a decisive role during the Soviet counter-attacks outside Moscow. In the wake of Operation Barbarossa, dive-bomber wing Stukageschwader (SG) 77 had destroyed 2,401 enemy vehicles (including aircraft on the ground), 234 tanks, 92 artillery batteries and 21 trains for the loss of just 25 aircraft. It was the best result achieved by any comparably sized German unit.

The Stuka became easy prey again, however, as 1941 ended, when the enemy received increasing numbers of superior fighters in North Africa and during the Battle of Stalingrad. The Ju 87, which from its very beginnings had a somewhat old-fashioned design, was now considered obsolete. During 1943, an increasing number of units switched their Ju 87s for the fighter aircraft version of the Focke-Wulf Fw 190. The dive bomber's day had passed.

Heinkel He 118.

HISTORIEARKIV

Nonetheless, the Ju 87 would have a last chance to leave its mark on the war. As the Soviets deployed more tanks against the hard-pressed German army, the need for flying 'tanks' became acute. The Luftwaffe had already developed the Hs 129 for this purpose, but its capacity was less than the Stuka's. There were fewer planes, too, while the production of the Ju 87 D had increased to 150 planes per month.

The Ju 87 D-3 and D-5 models had already been developed as ground-attack aircraft that could also be launched against tanks. But, acting on Stuka pilot Hans-Ulrich Rudel's proposal, the Luftwaffe decided to equip the Stuka with two powerful 37-mm anti-tank cannons in self-contained gun pods under its wings.

This became the Ju 87 G (models E and F were abandoned before entering production). It was also known variously as *Stuka mit dem langen Stangen* (Stuka with the long rods), *Kanonenvogel* (cannon bird) or *Panzerknacker*(tank buster).

"[THE STUKA] PLAYED A DECISIVE ROLE IN THE SOVIET COUNTER-ATTACKS OUTSIDE MOSCOW"

This plane operated at a low altitude and could therefore often stay away from enemy fighters. Its improved armour also made anti-aircraft defences less of a problem. When flown by a skilled pilot such as Rudel, the plane was able to continue operating in daylight, but most Ju 87s operated at night.

Although the Ju 87 was supposed to be one of the Luftwaffe's most specialised planes, it ended the war tackling many different roles. This wasn't so much a victory for Udet's wish for versatility, but rather confirmation that only the Ju 87 existed in sufficient numbers to fill a desperate need.

That said, the fact that so many Stukas were built with the ability to be adapted for new roles was almost exclusively down to Udet. Without his obsession, the Luftwaffe would have abandoned the Ju 87 at the prototype stage and concluded that the dive bomber wasn't suitable for warfare on land.

There's no doubt that the Stuka's shock effect contributed significantly to many victories in 1939-40 – and the plane continued to be an effective weapon whenever unchallenged in the air.

But in the war's final phase, the Luftwaffe would probably have fared better with a larger number of fighter-bombers, which were more likely to survive in airspace increasingly dominated by the enemy.

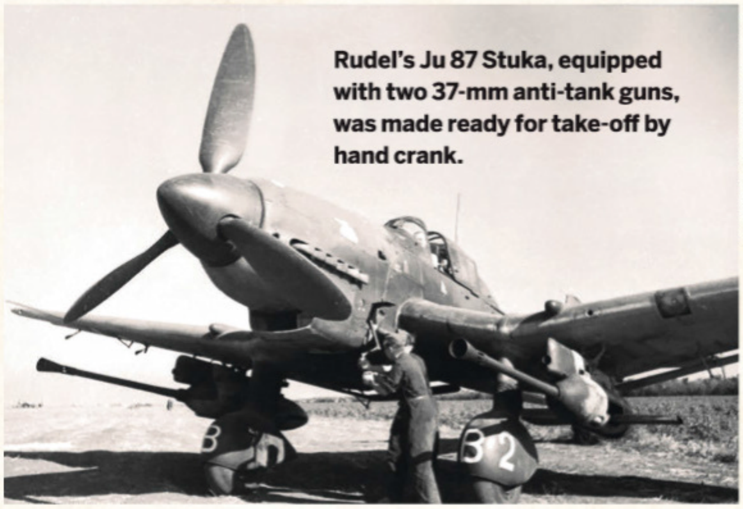
Udet never got to see the Ju 87's continuing development. He took his own life in November 1941, apparently overwhelmed by the administrative responsibilities placed on him along with his conviction that the war against the Soviet Union would be a disaster.

Rasmus Kjærbye Petersen is a noted writer of military history.

WWII's greatest tank destroyer

Two months after his leg was amputated, Hans-Ulrich Rudel flew his Junkers 87 Stuka against the enemy again. He carried out by far the most combat missions of all Germans, despite being twice thrown out of dive-bombing units for lack of flying ability.

Text: **CHRISTER BERGSTRÖM**



Rudel's Ju 87 Stuka, equipped with two 37-mm anti-tank guns, was made ready for take-off by hand crank.

BUNDESARCHIV, BILD 101I-655-5976-04

On 8th May 1945, as people around the world celebrated the end of the war in Europe, US soldiers at the Kitzingen airbase in Germany threw themselves flat on the ground as a Junkers 87 Stuka roared through the air just above their heads. It was followed by a terrible noise as the crow-like dive bomber belly-landed, its landing gear torn away.

The Americans rushed to the wreckage and saw a white-clad arm pushing against the cockpit hood. One of the first Americans to arrive spotted a gold medal with diamonds through the German's open canopy, but as he reached for the coveted spoils of war, the German closed the cockpit hood.

A helpful US officer managed to resolve a threatening situation. When the German stood up, everyone saw that he was bleeding heavily from his right leg, and when he tried to walk, it became clear that he wore a prosthetic limb.

The pilot, who turned out to be a colonel, was taken to the infirmary – where, to the dismay of the Americans, he was greeted with the Hitler salute from other German PoWs.

THE MAN WHO had voluntarily surrendered to the Americans was none other than Colonel Hans-Ulrich Rudel, Germany's most decorated soldier in World War II. Soon afterwards, while being interrogated, a US Army captain gazed thoughtfully at Rudel's Golden Oak Leaves with 58 set diamonds and murmured thoughtfully:

"How many lives can that have cost!"

Four months earlier, on New Year's Day 1945, Rudel had been summoned to Hitler's Eagle's Nest to receive this medal, a Knight's Cross with Golden Oak Leaves, Sword and Diamonds, which had been specially designed in Rudel's honour to mark his extraordinary merits as a fighter pilot.

FAMOUS PILOTS

DURING WORLD WAR II, US fighter pilots were usually called back home if they managed to survive 50-100 combat flights. This practice did not exist in Germany, where pilots often flew until they were killed or seriously wounded. The most skilled and experienced Luftwaffe pilots made it through several hundred – in some cases up to a thousand – combat flights. But none could match Hans-Ulrich Rudel, who stood in front of the Führer on that icy New Year's Day in 1945 with no fewer than 2,400 combat flights behind him.

However, this was enough even for Hitler.

"Now you have done enough flying. Your life must be preserved for the sake of our German youth and your experience."

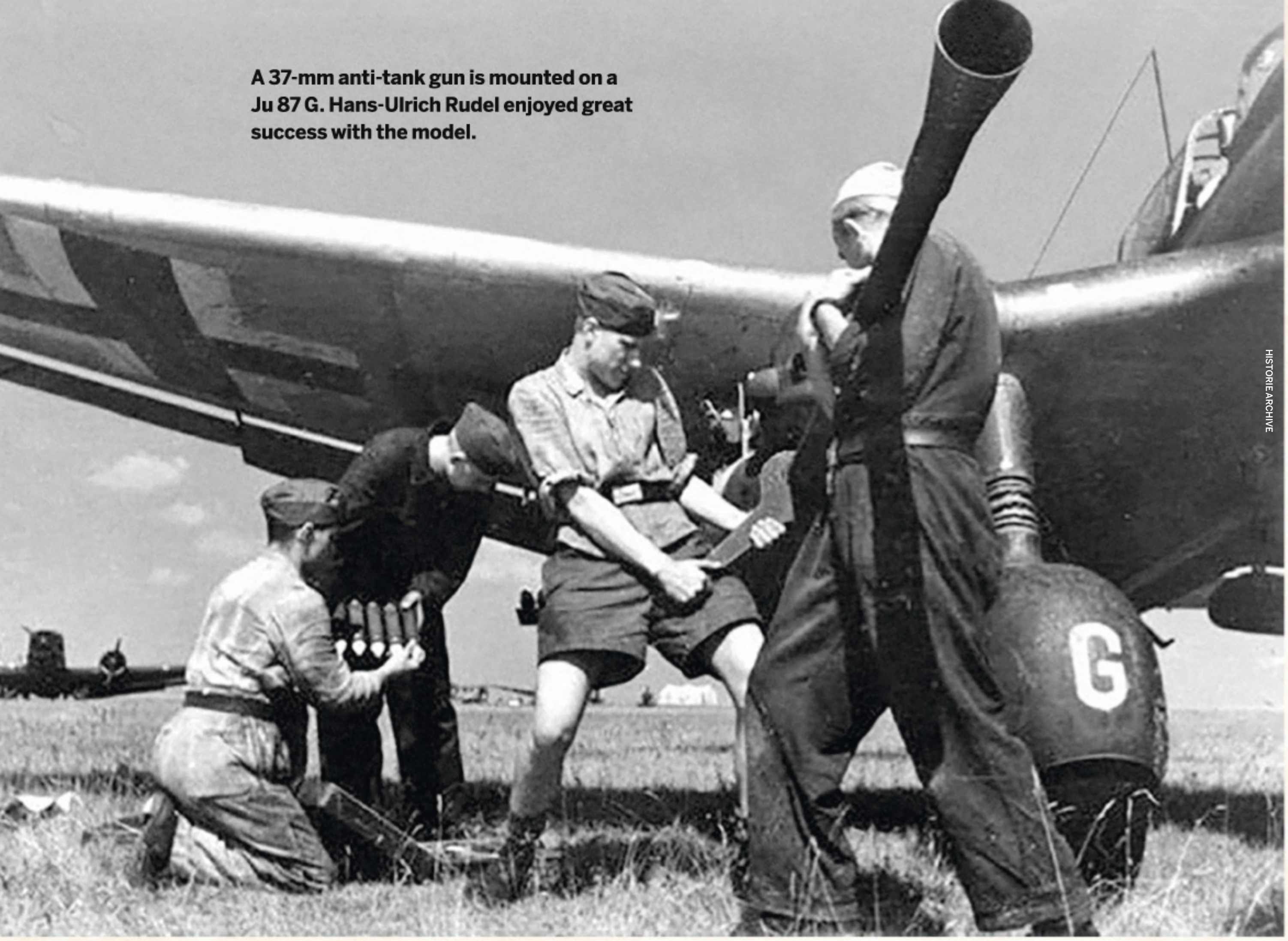
But this was something Rudel would not accept. In a firm voice, he made it clear that if he was not ►

ULLSTEIN BILD VIA GETTY IMAGES

Colonel Hans-Ulrich Rudel in the cockpit of his Stuka after taking command of the 'Immelmann' flying wing.

HANS-ULRICH RUDEL

Lived: 1916-82
Nickname: Eagle of the Eastern Front
Rank: Colonel
Awards: Knight's Cross with Golden Oak Leaves, Sword and Diamonds



A 37-mm anti-tank gun is mounted on a Ju 87 G. Hans-Ulrich Rudel enjoyed great success with the model.

HISTORIE ARCHIVE

▶ allowed to continue fighting, he would not accept the honour. Hitler had to give in.

No one could have imagined that Rudel would become the most highly decorated soldier in Germany when, in May 1941, he reported to I./StG 2, the first squadron in the German dive bomber flying wing Sturzkampfgeschwader 2 'Immelmann'.

Rudel was at this point somewhat notorious. Twice before, he'd been assigned to a dive bomber unit – the first time in 1938 – and on both occasions he'd been transferred out because of his inadequate flying skills. Would third time be the charm?

The omens weren't good. First, Rudel ran into a previous instructor, now squadron adjutant.

"There'll be no operational flying for you till you've learnt how to manage a Stuka," was the icy greeting. Later, Rudel was presented to Hauptmann Hubertus Hitschhold, head of I./StG 2.

"Until further orders you are not to fly with my squadron," he said, echoing his adjutant.

The fact that Rudel also stood out for his seemingly dull lifestyle didn't help matters. He didn't drink or appear to socialise with women, and avoided spending time in the officers' mess. Instead, Rudel spent his free time playing sport and climbing mountains, leading his fellow air force officers to consider him something of an oddball. However, Rudel would soon be given the opportunity to show that he had finally learned to fly a Junkers 87 Stuka, Germany's dreaded dive bomber.

Ju 87 fitted with autocannons

★ By the end of World War II, the Ju 87 was primarily flown only by Rudel and a few anti-tank divisions. Its low top speed (about half that of contemporary fighters) made the aircraft vulnerable to enemy fire. The Ju 87 G anti-tank version had 37-mm autocannons mounted in pods under the wings.

Junkers Ju 87 G

Launched	1936
Length	11 m
Wingspan	13.8 m
T/o weight	5,100 kg
Crew	2, pilot and rear gunner
Max altitude	7,300 m
Max speed	344 km/h
Engine power	1,410 hp
Armament	2x 37-mm BK,37 ac, 2x 7.92-mm mg (front), 2x 7.92-mm mg (rear)

ON 22ND JUNE 1941, Germany invaded the Soviet Union, with the 'Immelmann' wing at the forefront. Losses were heavy on both sides – the first day of the war cost the Luftwaffe 78 aircraft – and every man was needed, even someone like Rudel.

By September 1941, the Germans had surrounded Leningrad. But the guns of the Soviet Baltic Fleet's heavy ships inflicted substantial losses on the besiegers. The heavy bombers of the 'Immelmann' wing were called in. On 23rd September, Rudel dived vertically towards the Soviet battleship *Marat* and scored a direct hit with a 1,000-kg bomb, sinking the armoured giant in the middle of Kronstadt harbour.

Through 1942 and the following winter, Rudel flew over the Caucasus and Stalingrad, where he witnessed the destruction of the 6th Army and the Wehrmacht's subsequent retreat on the Eastern Front. If the sinking of the *Marat* had brought him his first bout of fame, Rudel now became known for his almost unimaginable fighting spirit and energy. He grabbed every opportunity to fly to the front, and completed 1,000 combat missions in just 14 months.

THANKS TO HIS extensive experience as a dive bomber pilot, Rudel was called back to Germany in spring 1943 to test new weapons. One of these was a Junkers 87 armed with two 37-mm anti-tank guns, one under each wing.

During the Battle of Kursk in July 1943 – Hitler's failed attempt to turn the tide of war on the Eastern Front – Rudel deployed his new 'gunship' against counter-attacking Soviet tanks. On his first raid, he managed to knock out four T-34s. By the end of the day, that number had increased to 12.

Thus Rudel's career as a flying anti-tank fighter began. Several other Junkers 87s were equipped with anti-tank guns, but none of the pilots came close to the results achieved by Rudel, now commander of his own flying anti-tank unit. In total, Rudel would be credited with destroying 519 Soviet tanks during the war – the equivalent of the strength of a dozen Soviet armoured battalions.

Against all odds, Rudel fought on, the epitome of the idealised, death-defying soldier of Third Reich propaganda. He was shot down repeatedly – more than 30 times in all – and had the unlikely good fortune to survive every time. After each occasion, he quickly returned to the fray.

Six times Rudel landed behind enemy lines to pick up downed airmen. On one occasion in March 1944, his own aircraft was unable to take off again because of the soft ground. With Soviet soldiers hot on their heels, the Germans ran over 6 km west until they reached the 600-metre-wide Dniester River. Rudel and his rear gunner Hentschel threw themselves into the freezing water and started swimming. With only 80 metres between them and the western bank, Hentschel disappeared below the surface. Rudel, who had come ashore, threw himself back into the icy water to save his comrade, but in vain.

A few hours later, a completely exhausted Rudel arrived at the German lines. Five days later he made his 1,800th combat flight, and the next day he took out 17 Soviet tanks with his gunship.

The Soviet battleship *Marat* was sunk by Rudel's direct hit.

HISTORIE ARCHIVE

“IN TOTAL, RUDEL WOULD BE CREDITED WITH DESTROYING 519 SOVIET TANKS DURING THE WAR”

While most German dive-bombing units switched to flying more modern Focke-Wulf 190 attack aircraft, Rudel and his flying anti-tank division continued to use their slow Junkers 87, even though these were relatively easy prey for more modern Soviet fighters.

From time to time, Rudel flew a Focke-Wulf, but he always returned to his favourite aircraft. Promoted to commander of the entire 'Immelmann' flying wing in October 1944, he was more or less free to do what he thought best.

The war might have ended for Rudel on 9th February 1945, when he was shot down and injured so badly that doctors had to amputate his right leg just below the knee. But he learned to walk with a prosthetic leg in record time, and by early April 1945, the pilot was back at the front, flying new combat missions. In the final weeks of the war, he was reputed to have destroyed another 26 Soviet tanks during the Battle of Berlin.

IN THE POST-WAR period, Hans-Ulrich Rudel became a very controversial figure in Germany. In the 1950s, he ran as a candidate for the far-right Deutsche Reichspartei. In autumn 1976, a political scandal ensued when senior officers of the West German Bundeswehr invited Rudel to a veterans' gathering at the Bremgarten air base. It ended with two German air force generals being forced into early retirement.

Rudel died in Rosenheim, Germany, on 18th December 1982, aged 66. Rudel's funeral also led to scandalous press coverage, as it was claimed that two Phantom jets with West German markings made an honorary flight in the air above, and *Der Spiegel* magazine published pictures of funeral attendees giving the Hitler salute.

Christer Bergström has written around 20 books on World War II.

Junkers Ju 88

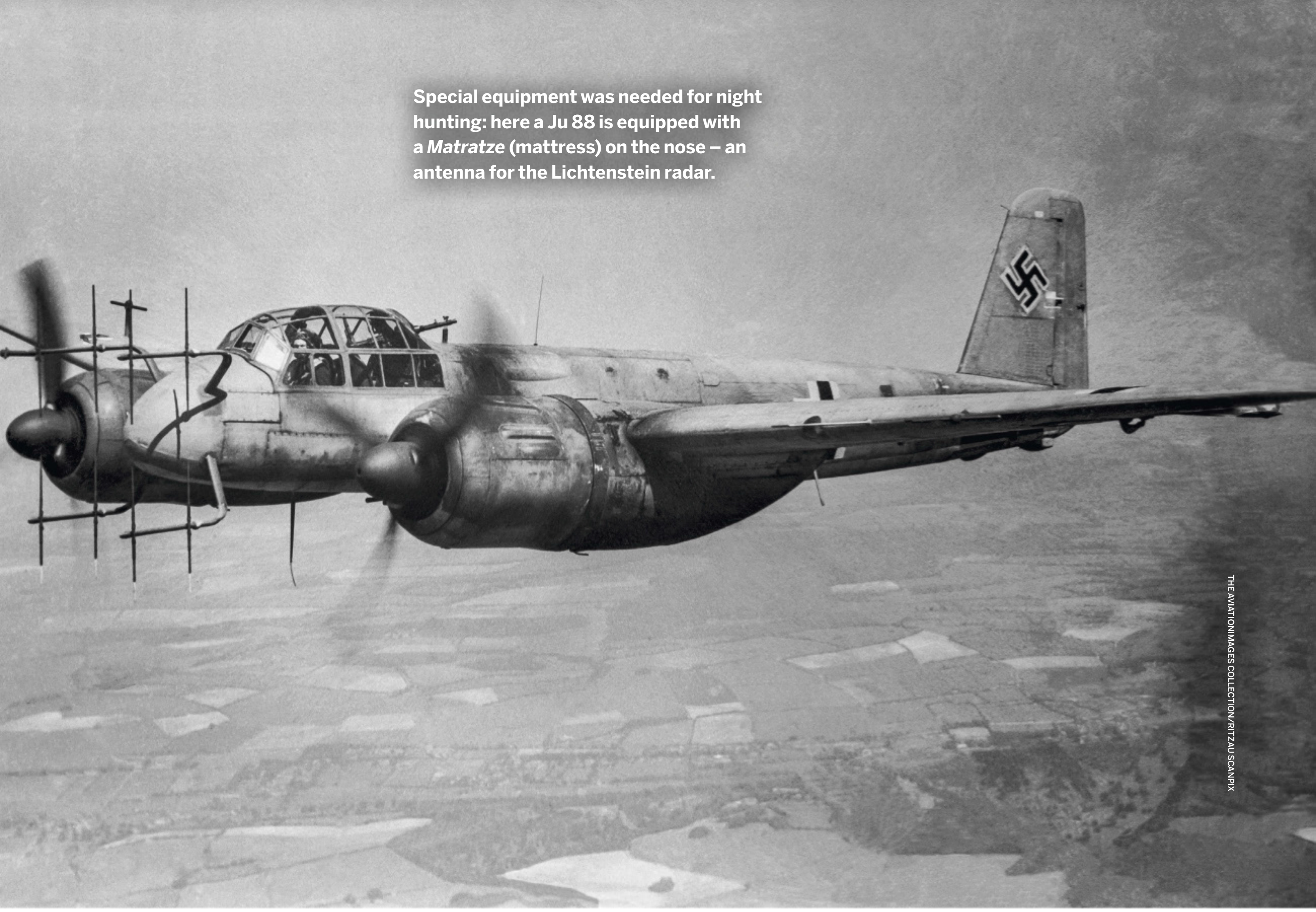
LUFTWAFFE'S SUPER-PLANE

The German Junkers Ju 88 aircraft was successful in all sorts of roles: bomber, torpedo, reconnaissance and night fighter plane. But some German airmen also used the Ju 88 to defect.

Text: **CHRISTER BERGSTRÖM**

A Junkers Ju 88 in its role as a bomber. It was originally produced as a *Schnellbomber* (fast bomber), but it soon became obvious that it could be adapted for other tasks.

APIC/GETTY



Special equipment was needed for night hunting: here a Ju 88 is equipped with a *Matratze* (mattress) on the nose – an antenna for the Lichtenstein radar.

THE AVIATIONIMAGES COLLECTION/RITZAU SCANPIX

World War II entered its fifth year in 1944. The tide of war had turned decisively against Hitler. The Germans were hard pressed on all fronts and their capital, Berlin, was the target of regular bombing raids. On Thursday 20th January 1944, 800 heavy bombers were loaded with bombs at airfields across central England. This was in the middle of what the RAF dubbed the Battle of Berlin. The head of RAF Bomber Command, Marshal Arthur Harris, planned to bomb Germany into submission before the end of April. From November 1943, he therefore focused his bombing raids on Berlin.

AT LEEMING AIRBASE, north of Leeds, the crews of the four-engine Halifaxes of the Canadian No. 6 Group boarded their aircraft. One of the units assigned to it was No. 429 Squadron, within which pilot Lieutenant Harold Paddison led a crew. He was a 28-year-old labourer from Ontario who had worked his way up to become an air force officer.

Some 550 kilometres to the south-east, at Deelen airbase near Arnhem in the Netherlands, a German pilot a year younger than Paddison climbed into his Junkers Ju 88 through the belly of the aircraft. Although they were both fighter pilots, the German airman and Paddison couldn't have been more different. The German was a major and a prince's son: Heinrich Prinz zu Sayn-Wittgenstein. He was of German nobility, an old military lineage, with all its attendant idiosyncrasies and ambitions.

While Paddison had flown his first combat mission just three months earlier, Prinz zu Sayn-Wittgenstein had been coming under fire since the beginning of the war. The young prince had risen to become commander of a night fighter squadron with over 100 aircrews. Now his goal was to become Germany's most successful night fighter ace. He already had 75 kills to his name, and he wasn't going to let anything get in the way of reaching 100.

HISTORIE ARCHIVE

Heinrich Prinz zu Sayn-Wittgenstein was a successful night fighter ace.

HIS PLANE WAS equipped with a Lichtenstein radar system that could detect enemy aircraft at a distance of up to five kilometres. On one occasion, Major Prinz zu Sayn-Wittgenstein was so furious with his radio operator for losing a target on his radar screen that he made the poor man stand to attention in the aircraft's cockpit for several hours.

Since the afternoon of 20th January 1944, German intelligence had been warning of a major air operation coming from Britain, and the prince intended to be first to tackle the bombers. He and his crew sat silently in their aircraft in readiness.

Then came the launch order. Wittgenstein turned to his radio operator, Sergeant Friedrich Ostheimer, and demanded: "Ostheimer, tell us we're taking off immediately!"

Prinz zu Sayn-Wittgenstein's grey-blue Junkers rolled on to the runway and took off into the night sky. The crew headed for Heligoland in the north-east. When they arrived, a radio call was made to all night fighter planes: "Everything to *Bär* (Bear)!" – Bear was the code name for Berlin. The German capital was once again Bomber Command's target.

Ostheimer – who had been punished for losing a target – carefully followed the signals on the radar. This had three screens: one for distance, one for the horizontal plane and one for the bearing.

Until this point, they'd been guided towards the bombers by the fighter commander, who had access to more powerful radar stations on the ground. After a while, the commander announced that they were approaching the bombers. Just then, they saw the anti-aircraft searchlights as confirmation.

Suddenly Ostheimer called out. He had two targets on his radar screens, six kilometres away. He guided pilot Wittgenstein, who chose one of them. It was Paddison's Halifax, with the tactical code AL-L.

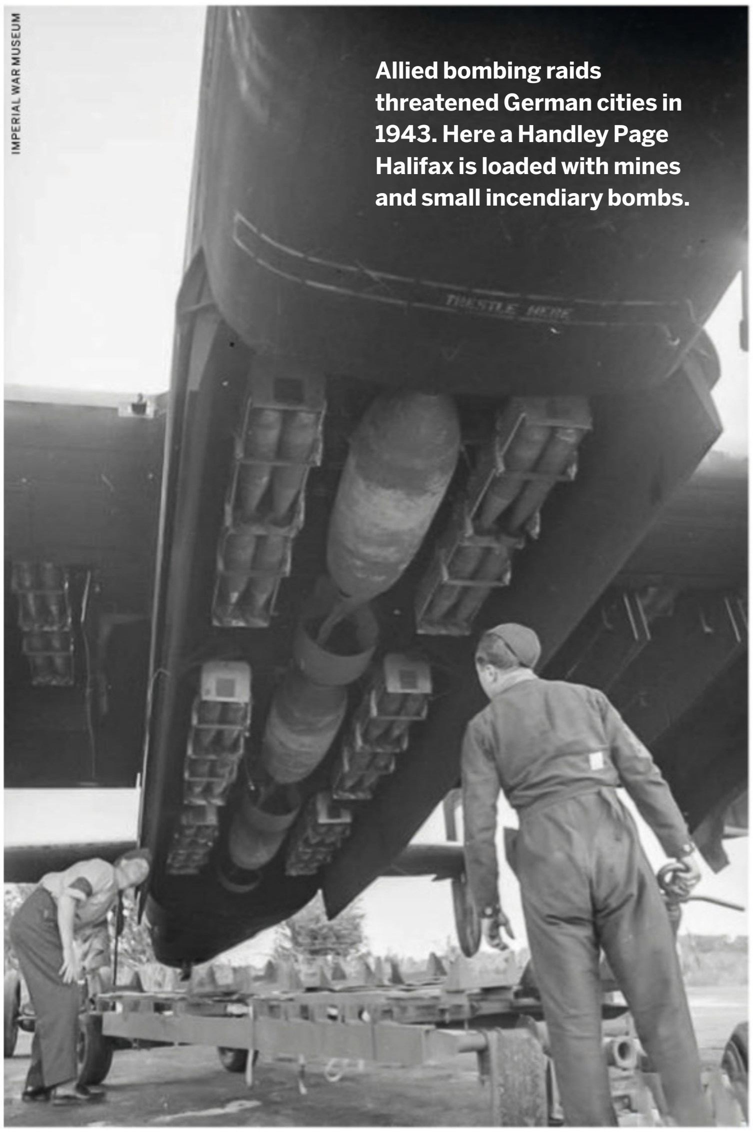
INSIDE THE BIG British bomber, Paddison communicated with his crew, unaware that one of the Luftwaffe's most dangerous night fighter aces had chosen his aircraft as its next victim. Wittgenstein's Junkers was equipped with so-called *Schräge Musik* (strange music): two upright 20-millimetre automatic guns. With these weapons, the Germans could fly directly below British aircraft – which stood out against the lighter night sky above – and shoot them down without being detected against the dark ground below.

"Our speed was matched to that of the [Halifax], which was flying 50 to 60 metres above us. Wittgenstein saw the wing of a bomber in his scope. I also looked up. The pilot very gently turned our machine to the right and, as soon as a wing between the two engines appeared in his sight, he pressed the trigger of the guns. The fiery track stretched to the bomber. A chain of explosions tore apart the fuel tanks, and the bomber's wing was instantly engulfed in violent flames. After the first shock, the British pilot threw the plane to the right, and we had to turn away at high speed to get out of the area of fire. A moment later, the bomber, engulfed in flames like a comet, flew in a wide arc towards the ground," Ostheimer recalled after the war.

"THE LUFTWAFFE'S MOST DANGEROUS NIGHT FIGHTER HAD CHOSEN HIS NEXT VICTIM"

The Halifax fell north-east of Lüneburg, south-east of Hamburg. Around the widely scattered wreckage, six dead bodies were found the following day. One of them was Harold Paddison. Only one man was able to parachute to survival. That was Sergeant Ralph Saffron, who was captured and sent to POW camp L6.

SOON OSTHEIMER HAD a new Halifax on his radar screen. It was MP-R of No. 76 Squadron, ►


IMPERIAL WAR MUSEUM

Allied bombing raids threatened German cities in 1943. Here a Handley Page Halifax is loaded with mines and small incendiary bombs.

ALBUMWAR2.COM

Inside the cockpit of a Ju 88. The crew consisted of three or four men: pilot; radio operator and rear gunner; bomb aimer and nose gunner; and navigator and ventral gunner.

piloted by Sergeant Arthur 'Red' Patterson Gibson. Ostheimer continued his recollection:

"Wittgenstein cautiously approached the [Halifax]. Immediately after the first burst of 'Schräge Musik' the [Halifax] caught fire. For another moment, it flew on the same course, but then fell to the side and went down. After some time, [flight engineer] Matzuleit again reported on its fall and explosion. Whether any of the British pilots managed to jump out by parachute, we did not see." Ostheimer believed that they should have had a good chance, because his crew hadn't shot at the fuselage or cockpit.

BUT OSTHEIMER WAS wrong. Not one of the seven-man crew survived. They are now buried in Berlin's war cemetery.

The hunt continued in the night sky. Prince Wittgenstein still had plenty of ammunition and there were several British bombers nearby. All the while, the three German airmen watched as 'comet tails' marked the falling British aircraft.

"I didn't have time to think, because I already saw the next target on my radar," Ostheimer said.

For the third time, Prince Wittgenstein flew under the target. This, too, was a four-engine Halifax, code VR-M, with Sergeant Ivan Hopkins at the controls. Flight engineer John Cagey recalled afterwards that the landing gear had refused to retract on their Halifax, nicknamed *M for Mike*, after take-off, so they fell behind the others. After many desperate attempts, they managed to get the landing gear in a little, but had to dump their incendiary bombs to reduce the load and gain speed.

Suddenly they were attacked by a night fighter plane. Pilot Hopkins had to take evasive action when the starboard engine suddenly caught fire. He did what is known as feathering, setting the propeller blades so they were edgewise to the flight direction and didn't move. This was a desperate manoeuvre because it slowed the plane down and increased the risk of being shot, but it reduced drag and made the plane glide better through the air.

The men aboard the bomber were in a cold sweat, expecting to receive the coup de grâce from the German night fighter's guns at any moment. But to their great surprise, there were no shots, and the pilot managed to extinguish the flames by gliding, and was able to restore the propeller angle.

HOPKINS, CAGEY AND their crew mates had no idea what was happening on the enemy side. The night fighter plane that had attacked *M for Mike* was not Wittgenstein's, but the ambitious prince

MCCOOL/ALAMY

The Ju 88 was so successful that production increased significantly in 1944, with over 15,000 aircraft produced in total.

and squadron leader had spotted the flames of the burning engine and headed towards it, switching on the radio and shouting a harsh order:

"Hier Wittgenstein, geh weg!" ("Wittgenstein here, clear off!")

The subordinate night fighter pilot obeyed and Prince Wittgenstein dived under the British bomber and fired at both engines on one side. This time the entire crew managed to parachute out and survived. They ejected so quickly that the plane abruptly tipped its nose downwards, fell vertically – and hit one wing of Wittgenstein's night fighter.

Had Wittgenstein been flying a small Messerschmitt Bf 110 – the most common German night fighter at the time – he would have been doomed. But he flew a robust Junkers Ju 88 – arguably the Luftwaffe's super-plane – and managed to right the machine and land at the nearest airport with the entire crew unharmed.

Now let's look at another incident involving such a super-plane, the Junkers Ju 88, many kilometres away and 11 months earlier.

ON 19TH FEBRUARY 1943, some aircraft of that type may have helped extend World War II by two years. This was on the Eastern Front. The Battle of Stalingrad had been decided – the German 6th Army had been destroyed – and the Red Army was on a major offensive.

"THEY EJECTED SO QUICKLY THAT THE PLANE ABRUPTLY TIPPED ITS NOSE DOWNWARDS"

In these desperate circumstances, Hitler went to General Field Marshal Erich von Manstein's headquarters in Zaporozhye on the River Dnieper to get an overview of the situation.

That was easier said than done. The entire southern part of the German Eastern Front had disintegrated, and across the endless snows of Ukraine, Soviet forces advanced almost unopposed. No one knew how far the Red Army had reached.

SUDDENLY THERE WAS a panicked report: Soviet cavalry were approaching Zaporozhye at high speed. Between them and headquarters there were no German soldiers, only staff and troop personnel, and some military police. The only forces available were von Manstein's own guards – and these were Cossacks in the service of the Germans. No one ►

knew whether they would turn their guns on the Germans the moment the Red Army appeared.

Hitler's meeting was abruptly cancelled and he was driven at top speed by car to the airport, where his four-engine Focke-Wulf Fw 200 Condor was ready for take-off. In the cockpit, SS Colonel Hans Baur, the Nazi dictator's personal pilot, looked nervously at the approaching party.

HISTORIE ARCHIVE

Captain Klaus Häberlen, commander of KG 51 Edelweiss. The squadron's emblem was a white flower on a blue background.

Hitler wanted to say a few words but realised from the atmosphere that there was a real sense of urgency. His Luftwaffe adjutant, Colonel Nicolaus von Below, later recalled that as they made their way to the airport, he could hear shelling and machine-gun fire from the east. The Soviet forces were thus very close. So, the plane took off through a cloud of drifting snow and carried the Führer to the safety of his headquarters in Vinnytsia, 500 kilometres to the west.

However, what von Below had heard was not shelling, but bombing. A handful of Luftwaffe pilots had saved Hitler. From the same airfield at which Hitler's Condor was located, a group of twin-engine Junkers Ju 88 bombers had taken off early in the morning. They belonged to the I./KG 51 "Edelweiss" bomber flotilla, led by veteran Captain Klaus Häberlen.

Häberlen knew that an advanced Soviet force had captured the small town of Synelnykove, less than 30 kilometres north of Zaporozhye, the previous night. But as his planes flew off to attack it, they spotted the Soviet cavalry on the outskirts of Zaporozhye. At the last minute, the Ju 88s averted a surprise attack on the city using their bombs and machine guns, while at the same time alerting headquarters by radio of the acute danger.

The snow was coloured red with the blood of horses and soldiers, but the Soviets responded with more forces from Synelnykove. Häberlen and his men quickly flew back to their base, where their planes were reloaded with bombs and ammunition as quickly as possible. Then they took off again and just a few minutes later were pouncing on the enemy forces.

The Soviets were completely helpless against air attacks in the vast open fields. This was the breadbasket of the Soviet Union – the terrain was a patchwork of cultivated land. There was terrible carnage as the Ju 88s dived down with guns blazing and dropped their shrapnel bombs. They were in action all day. Häberlen himself carried out five bombing raids in the space of a few hours. When it was all over, the advanced Soviet cavalry force at Synelnykove had been destroyed.

“IT WAS A REVOLUTIONARY BOMBER, UNLIKE ANY OTHER.”

ONE WONDERS WHETHER World War II was prolonged on that fateful day, 19th February 1943. The Soviet troops had come very close not only to seizing Hitler, but also to capturing Zaporozhye and Dnipropetrovsk. The fact that bombs were heard as Hitler drove towards the airfield shows that the Junkers 88s prevented the Soviet cavalry from riding towards Manstein's headquarters just in time.

It goes without saying that with Hitler in Soviet captivity, World War II could have come to a very abrupt end there in early 1943. It's highly doubtful that the Germans would have survived such a setback so soon after the disaster at Stalingrad. Rarely has aviation played such a totally decisive role as it did in the Luftwaffe's operation at Zaporozhye in February 1943, and the planes that made the difference were Junkers 88s.

The Junkers 88 was indeed a super-plane. It was used during World War II in a whole range of roles, such as:

- horizontal bomber
- dive-bomber
- reconnaissance aircraft
- torpedo bomber
- attack aircraft
- anti-tank plane
- night fighter
- explosive-filled drone called *Mistel* (Mistletoe)

And in all these roles it was successful – often being the best the Luftwaffe had.

THE JUNKERS 88 was ordered by Luftwaffe commander Hermann Göring. It entered service just as World War II began. On 26th September 1939, the British were shocked by the effectiveness of four state-of-the-art twin-engine bombers that dive-bombed a naval unit in the North Sea. The aircraft carrier *Ark Royal* had a close call and the battlecruiser *Hood* was hit amidships by a 500-kilogram bomb that fortunately turned out to be a dud. The planes then left as quickly as they had appeared. The British had made their first acquaintance with the world's most modern aircraft at the time, the Junkers Ju 88.

It was a revolutionary bomber, completely unlike any other. The Ju 88 could drop bombs both in horizontal flight and with precision when dive-bombing. The aircraft was also faster than

A formation of Ju 88s from KG 51 Edelweiss flies over the Eastern Front.

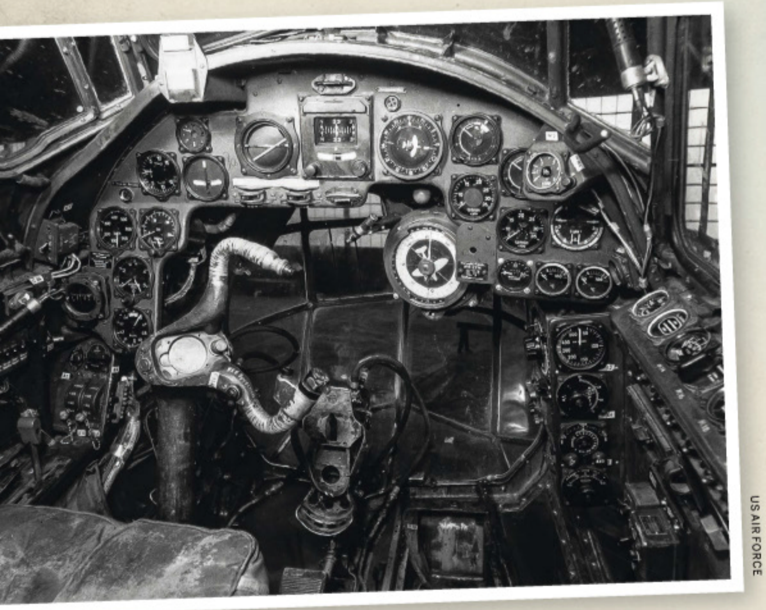
SCHERL/SUEDDEUTSCHE ZEITUNG PHOTO/RITZAU SCANPIX

German bomber squadrons

★ The Luftwaffe's bomber units were called *Kampfgeschwader,* literally combat squadrons, abbreviated as KG. Such a squadron usually consisted of a staff division of 12 aircraft and three flotillas *(Gruppe)* of 40 planes each. Each bomber squadron was numbered with Arabic numerals, such as KG 51 or KG 77. The flotillas in each squadron were designated with Roman numerals. For example, the first squadron in bombing squadron 51 or 77 was I./KG 51 or I./KG 77 respectively.

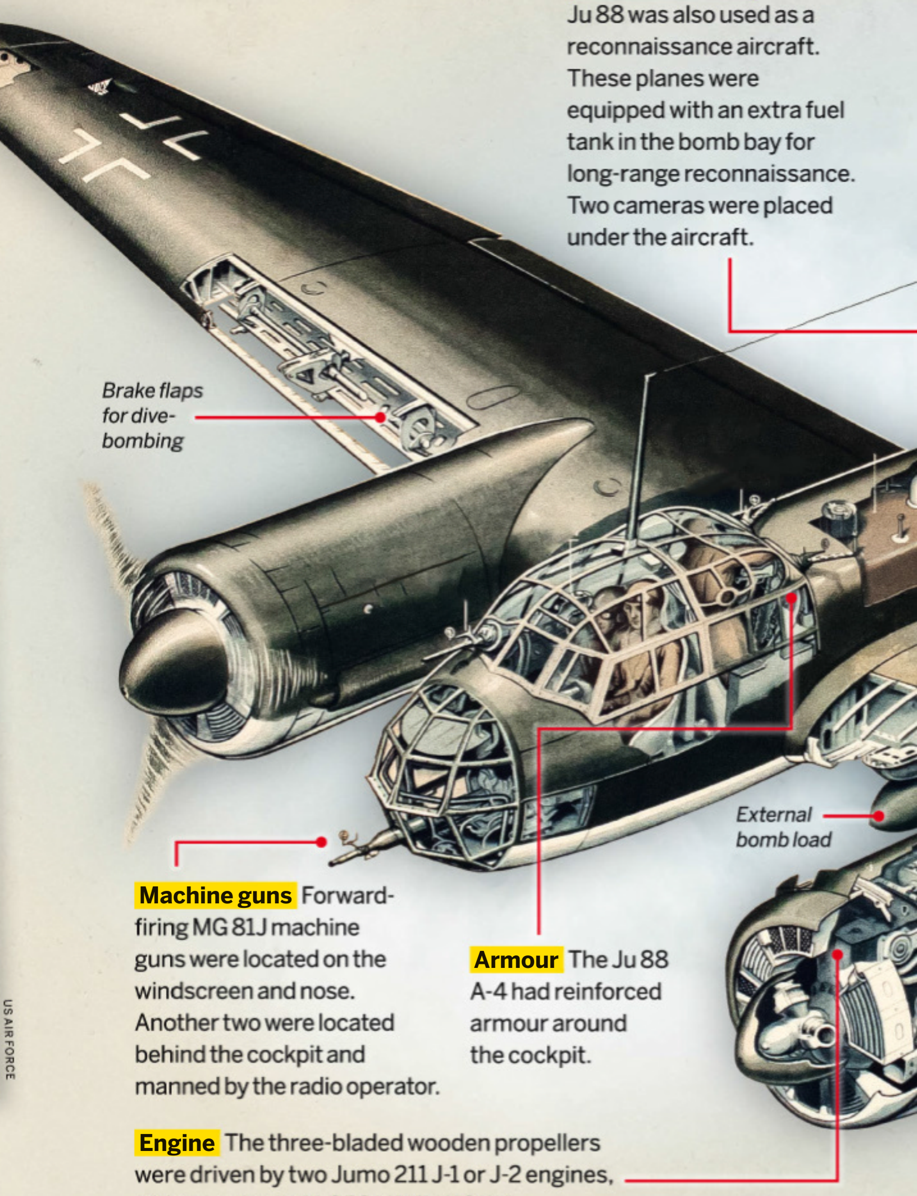
JUNKERS JU 88 A-4

The Ju 88 was completely revolutionary when deployed as a bomber. The A-4 variant was an improved version that first entered service at the end of the Battle of Britain.



US AIR FORCE

View of the instrument panel inside the cockpit of a Ju 88. To the left would be the pilot, and to his right would be the bomb aimer.



Reconnaissance The Ju 88 was also used as a reconnaissance aircraft. These planes were equipped with an extra fuel tank in the bomb bay for long-range reconnaissance. Two cameras were placed under the aircraft.

Machine guns Forward-firing MG 81J machine guns were located on the windscreen and nose. Another two were located behind the cockpit and manned by the radio operator.

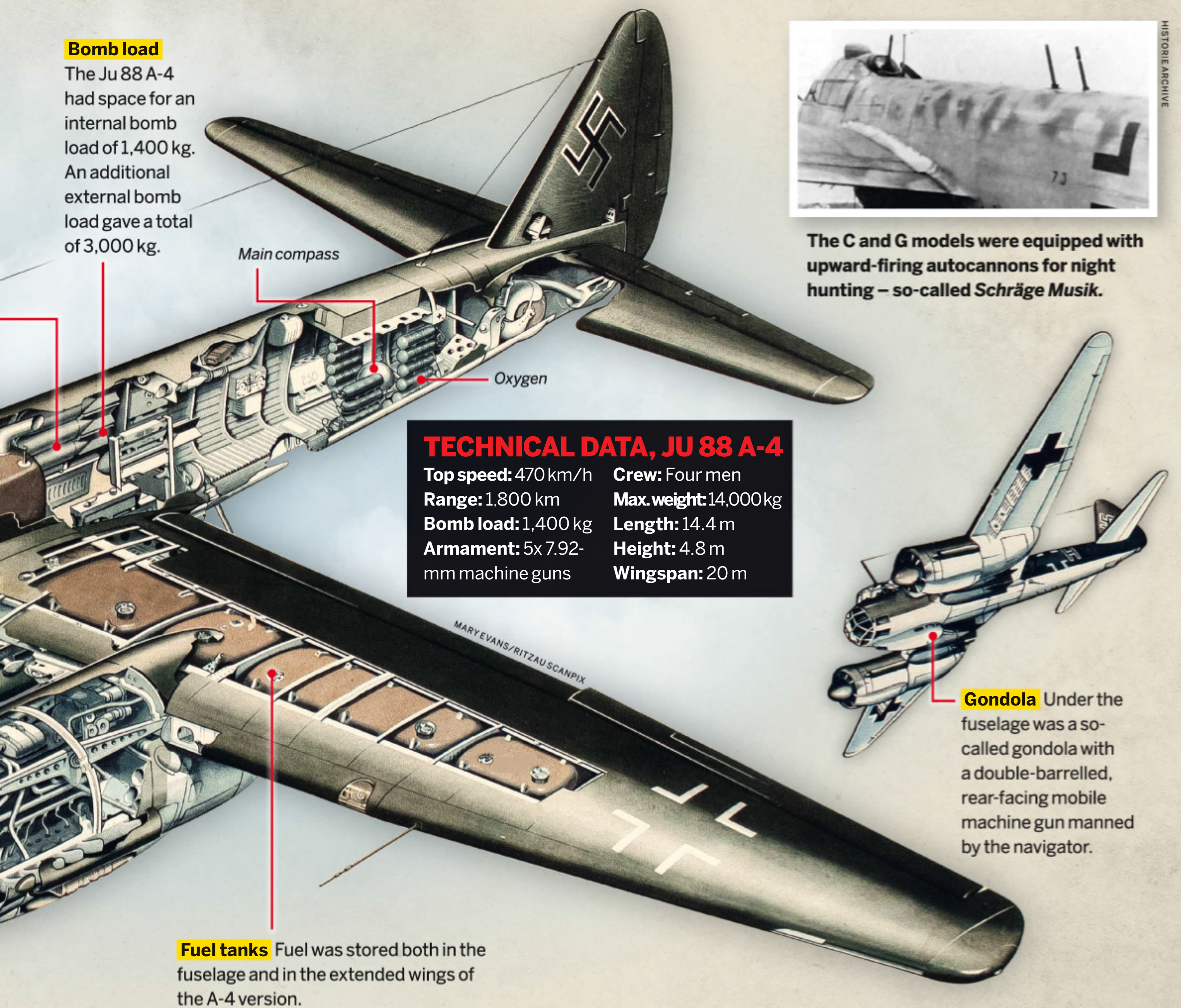
Armour The Ju 88 A-4 had reinforced armour around the cockpit.

Engine The three-bladed wooden propellers were driven by two Jumo 211 J-1 or J-2 engines, with an output of 1,050 kW (1,410 hp).

▶ most other bombers of the time – its top speed was 470 kilometres per hour, and it could reach 600 km/h when diving. The bomb load was 3,000 kg, more than most twin-engine bombers could carry, and the range was 1,800 kilometres. When dive-bombing, the bombs were released automatically when the aircraft exited its dive – which also happened automatically.

The aircraft was not deployed during the invasion of Poland on 1st September 1939, because it was so new. But during the invasion of Norway on 9th April 1940, dive-bombing Ju 88s repeated their success against the Royal Navy – and this time there were no duds. They sank the destroyer *Gurkha* and damaged several cruisers and the battleship *Rodney*. In doing so, the aircraft played an important role in the German victory in the Battle of Norway.

DURING THE BATTLE of France in May and June 1940, the Ju 88 proved to be very effective in precision dive-bombing the French railway network. Between 13th and 24th May 1940, Luftwaffe bomb squadron II./KG 54 carried out 174 dive-bomb attacks on France's railways, paralysing rail transport to the front. The same KG 54 squadron also gained notoriety for the bombing of Rotterdam on 13th May 1940, which killed over 800 people and destroyed most of the



Bomb load The Ju 88 A-4 had space for an internal bomb load of 1,400 kg. An additional external bomb load gave a total of 3,000 kg.

The C and G models were equipped with upward-firing autocannons for night hunting – so-called *Schräge Musik*.

HISTORIE ARCHIVE

Gondola Under the fuselage was a so-called gondola with a double-barrelled, rear-facing mobile machine gun manned by the navigator.

Fuel tanks Fuel was stored both in the fuselage and in the extended wings of the A-4 version.

MARY EVANS/RITZAU SCANPIX

GRAPHIC: JOHNNY OBERG

TECHNICAL DATA, JU 88 A-4

Top speed: 470 km/h
Range: 1,800 km
Bomb load: 1,400 kg
Armament: 5x 7.92-mm machine guns
Crew: Four men
Max. weight: 14,000 kg
Length: 14.4 m
Height: 4.8 m
Wingspan: 20 m

city centre. Perhaps fittingly, the squadron was called *Totenkopf* (skull and crossbones), and had the macabre motif as its emblem.

The German victory over France in June 1940 was followed by the Battle of Britain. The enduring image of the campaign is of British fighter planes fending off German bombers and inflicting heavy losses on the Nazis. While this is largely true, the Junkers Ju 88 in fact performed well in this famous aerial showdown.

The biggest loss of Junkers 88s during the Battle of Britain occurred on 12th August 1940, when bomber squadron KG 51 "Edelweiss" lost ten aircraft out of 63 planes participating in an attack on the port of Portsmouth. However, 12 days later, the Ju 88s of KG 51 made a lightning dive attack on the same target and set fire to the oil tanks (which burned for 36 hours), losing only one of their own aircraft during the assault.

"THE JU 88 WAS INVALUABLE ON THE EASTERN FRONT"

Another example of the Ju 88's prowess during the Battle of Britain was on 27th September 1940, when the British deployed 200 fighters to counter an attack by the Luftwaffe. Most were concentrated ▶

“ONE LUFTWAFFE PILOT LANDED IN BRITAIN THREE TIMES DURING THE WAR”

against 15 Ju 88s of I./KG 77, but only four Junkers were shot down. The Germans actually fared worse in some air battles on the Eastern Front.

Hitler’s invasion of the Soviet Union on 22nd June 1941 began with a massive air attack on Soviet airbases. Despite the surprise dawn assault, Soviet fighters took off – even in the middle of the bombing raid – and pounced on the Germans. III./KG 51 “Edelweiss” had seven of its 28 Ju 88s shot down by Soviet fighters on its first mission against Soviet targets. In total, KG 51 lost 15 Ju 88s on the Eastern Front that day – the largest single-day loss of any Ju 88 squadron in the war.

BUT THE JUNKERS Ju 88 was also invaluable to the Germans on the Eastern Front. A single Ju 88, piloted by Ernst-Wilhelm Stadermann of II./KG 77, destroyed 46 Soviet aircraft during a raid on the airbase at Kaunas in Lithuania on 22nd June 1941. Another Ju 88 pilot, Lieutenant Ernst-Wilhelm Ihrig of KG 3 *Blitz* (Lightning), carried out six low-level attacks on the airbase at Pinsk in Belarus, destroying 48 more Soviet aircraft. KG 3 “Blitz” destroyed 439 trains, nearly 5,000 lorries, 39 tanks and 450 aircraft on the ground during the first 11 weeks of the war in the East.

THE JU 88 D photo-reconnaissance variant was also crucial to German strategy. The 1942 Soviet top ace Boris Safonov, with 20 air victories to his credit, was killed when he was shot down by the tail gunner of a Ju 88 reconnaissance plane on 30th May 1942. This took place during the air battles in the Cap of the North. In the same region, it was Ju 88s that, together with U-boats, almost destroyed the Allied Arctic convoy PQ-17 in early July 1942 with bombs and dive-bombing.

But the Ju 88 was also used as a torpedo aircraft. On 2nd December 1943, 105 Junkers Ju 88s – many of them carrying torpedoes – attacked the Allied-captured port of Bari in Italy. They sank around 20 ships in the harbour – including one loaded with mustard gas. Around 1,000 men were killed in the air raid, most of them by the leaking gas. The port of Bari was blocked by sunken ships and did not return to full use until February 1944. The price for this success was a single lost Ju 88.

On the Eastern Front, a new version of the aircraft, the Ju 88 C, was used to attack trains. These planes had a solid metal nose with five 20-millimetre automatic guns along with two 7.92-millimetre machine guns.

Sometimes the Germans painted the nose of their Ju 88 C to make it look as though it was made of glass, like regular bombers, so that Soviet fighters failed to recognise it and would attack head on. It was a mistake that cost many a Soviet pilot dearly.

On the Eastern Front, there was also a small number of the Ju 88 P variant, armed with anti-tank guns of various calibres (37-mm, 50-mm or 75-mm) for anti-tank operations.

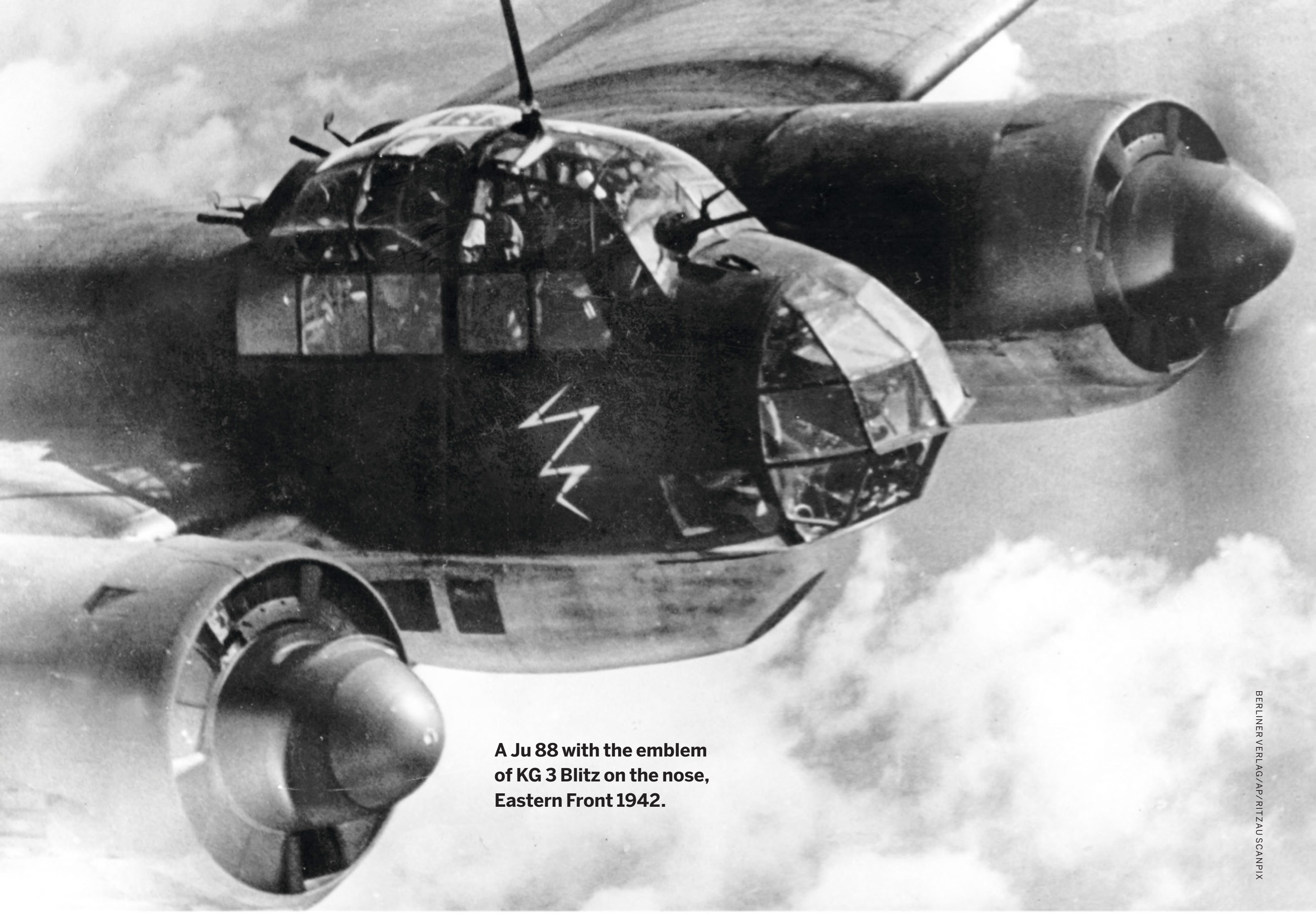
We have already discussed the success of the Ju 88 as a night fighter. In early 1944, a specially designed night fighter version of the aircraft was introduced. Previously, the Ju 88 C attack version had been used in this role, but now came the Ju 88 G. It was a phenomenal night fighter with a top speed of 625 kilometres per hour, a range of 1,700 km and a formidable armament: four 20-mm automatic guns under the belly, two 20-mm Schräge Musik automatic guns pointing upwards and a 13-mm rear gun.

THE JU 88 G was so successful that orders were given to scale back production of the standard Messerschmitt Bf 110 night fighter in order to produce more Ju 88 Gs. By the end of 1944, virtually every German night fighter plane was a Ju 88 G. From the summer of 1944, Nazi night fighters effectively operated blind because the Allies had jammed all radar. The fact that German night fighters still managed to shoot down over 1,500 British bombers during the last 12 months of the war was mainly due to the Ju 88s.

But the British got their hands on two Ju 88 night fighters during the war, giving them invaluable information to counter the threat of this super-plane. The first of these was accompanied by an amazing tale.

One Luftwaffe pilot actually landed his plane in Britain voluntarily three times during the war. His name was Herbert Schmid (although he called himself Heinrich).

In 1941, Schmid was a pilot in a night fighter division. On the evening of 20th May 1941, he took off in a twin-engine Dornier 217 night fighter from Aalborg, Denmark, and by some sort of agreement, landed his aircraft unchallenged at RAF Scampton airbase near Lincoln. There he handed over a sealed package to a senior member of the British wartime leadership in complete secrecy, and was then allowed to take off again and return to his own base.



A Ju 88 with the emblem of KG 3 Blitz on the nose, Eastern Front 1942.

BERLINER VERLAG/AP/RITZAU SCANPIX

The contents of the package and the purpose of Schmid's mission remain shrouded in mystery to this day; the British documents on the matter appear to remain classified. It has been speculated that the secret package Schmid delivered was related to Rudolf Hess's flight to Scotland ten days earlier. Schmid himself said in an interview:

"It was all part of the grey war that existed at that time. I wasn't the only German pilot to land by arrangement in Britain, and several British pilots made landings in Germany, which were known to the people who mattered on our side."

SCHMID HAD BEEN to Britain once before during the war; on 14th February 1941 he had made a similar flight to RAF Debden. But there would be a third flight to a British airbase, this time for good. At 15.03 on 9th May 1943, he took off from Aalborg together with radio operator Sergeant Paul Rosenberger and flight engineer Sergeant Erich Kantwill. They flew a Junkers Ju 88 R-1 night fighter, equipped with the very latest German aircraft radar, the FuG 202 Lichtenstein B/C. This had enabled the German night fighters to inflict increasing losses on British bombers over the previous months. The average loss rate on RAF night bombing missions was now almost five percent, meaning that British bombers could not expect to survive more than 20 combat missions at most.

SCHMID FLEW TO the airfield at Kristiansand in Norway, where he landed to refuel after exactly one hour of flight time. At 16.50, the night fighter crew took off again. Their mission was to track down and attack a British Mosquito courier aircraft over the Skagerrak strait, which at the time was making regular flights between Stockholm and Leuchars in Scotland to deliver, among other things, Swedish ball bearings. But Schmid, who had never shot down an aeroplane before, instead headed straight out over the North Sea.

The 29-year-old Schmid's father was a social democrat and an underground opponent of Hitler. The elder Schmid did his best to convince his son that he was fighting for an evil cause. Then, when the Gestapo arrested Schmid's Jewish girlfriend and took her to a concentration camp, all bets were off. From that moment on, Herbert/Heinrich Schmid was a sworn enemy of Hitler. After the war, he said:

"I had seen enough with my own eyes how things stood for us; the oppression, the deaths

IMPERIAL WAR MUSEUM

An Avro Lancaster drops Window strips to disrupt German radar over Duisburg, October 1944.

▶ on the battlefields, the murder of my Jewish fiancée. The country was wading in blood. It was enough." The fact that the radio operator on board Schmid's aircraft, Paul Rosenberger, was an opponent of Nazism is also easy to understand; he was Jewish himself, but had managed to escape the attention of the Nazi authorities and enrolled in the German armed forces. However, Kantwill, the flight engineer, knew nothing about what the other two were planning.

AT 17.10, ROSENBERGER sent a false radio message to the night fighter control centre in Denmark saying that the starboard engine had caught fire. Kantwill protested wildly, but calmed down when the radio operator threatened him with his service pistol. Schmid manoeuvred the Junkers down until it was just above the waves in order to evade German radar, then Kantwill, at gunpoint, threw out three rubber life rafts. Schmid's and Rosenberger's intention was that this would make the Germans believe that the aircraft had crashed over the North Sea. Schmid then proceeded to Scotland, where he landed relatively undramatically at Dyce airbase.

A few days after landing, the British agreed to transmit a coded message over their secret radio station Gustav Siegfried Eins: *"Der Mai ist gekommen."* ("May has come.") According to Schmid, this was the prearranged confirmation to his father that he had landed safely in Britain. The Luftwaffe, however, reported that the aircraft had crashed in the North Sea, as Schmid and Rosenberger had hoped.

"HE CALMED DOWN WHEN THE RADIO OPERATOR THREATENED HIM WITH HIS SERVICE PISTOL"

AFTER A WHILE, Schmid and Rosenberg started broadcasting to Germany under assumed names via Gustav Siegfried Eins at 16.00 every day:

HISTORIE ARCHIVE

The crew of this Ju 88 deserted from Norway to Britain in May 1943. The British then gained access to the secret FuG 202 AI radar.

"The war is lost. Don't sacrifice your lives for a futile war and incompetent leaders. In England and Sweden there are airfields where you will be welcomed as we are. Remember – waggle the wings of your aircraft, and you will be escorted into a safe landing."

By having access to the advanced German air defence radar on board the Junkers Ju 88 – and the extensive collection of documents about it that Schmid had brought with him – the British were able to develop several highly effective countermeasures that would drastically reduce their own losses. One of these was the Serrate radar warning system built into British aircraft, which responded to signals from the Lichtenstein B/C radar used by German night fighters. As early as June 1943, the loss ratio of British bombers fell from nearly five percent to just over three percent. The captured German radar equipment also enabled the British to measure the optimum length of the tinfoil strips (known as Window) that they would soon be dropping in large quantities to blind German radar. The British first used Window during Operation Gomorrah, the bombing of Hamburg in July 1943, which rendered German radar completely useless and killed 42,600 people in Hamburg in the most concentrated attack by British bombers to date.

SCHMID RETURNED TO West Germany after the war and was eventually employed as a test pilot by Triumph, but emigrated a few years later, after which ►

Preserved examples

★ There are at least five Junkers Ju 88s on display in museums today. Two are in Norway: at the Norwegian Armed Forces Aircraft Collection at Gardermoen, Oslo, and at the Norwegian Aviation Museum in Bodø.

The latter has an interesting story. En route to the Banak base in Norway on 13th April 1942, it ran out of fuel. The crew parachuted out and survived, but the aircraft continued, never to be seen again during the war. In 1988, the surprisingly well-preserved aircraft was recovered by the museum in Bodø. It turns out it had been gliding for several kilometres before crashing on a mountain plateau.

Other Ju 88s are in the Deutsches Technikmuseum in Berlin, the Royal Air Force Museum in London, and the National Museum of the US Air Force in Dayton, Ohio.

ALAN WILSON

The Norwegian Aviation Museum displays the wreck as it lay on the tundra until 1982.

all traces of him have disappeared. According to the German authority for information on former Wehrmacht soldiers, Herbert Schmid died on 4th May 1983. However, Rosenberger remained in Britain, where he adopted a new identity. By 1979, he was running a hotel and restaurant in Marlborough, Wiltshire. Erich Kantwill emigrated to Canada and then to the USA. But the crew's Junkers Ju 88 R-1 remains in Britain and can be seen today at the Royal Air Force Museum in London.

Another Junkers Ju 88, this time a Ju 88 G, which landed at Woodbridge airfield in England on the night of 12th-13th July 1944, helped save the lives of many British bomber crews. This time it was a navigational error that brought the pilot, Sergeant Hans Mäckle, into enemy hands. But he played only a minor role – on his aircraft, the British found the latest German technology, including the new Lichtenstein SN-2 radar system and apparatus called the Flensburg. To their horror, the British discovered that it could pick up the so-called Monica transmissions of British bombers, which warned of approaching German night fighter radar.

BUNDESARCHIV, BILD_146-1969-150-67

Lehweß-Litzmann's squadron KG 3 Blitz suffered heavy losses on the Eastern Front, so he defected.

SEVERAL OTHER DEFECTIONS or attempted defections were made in Junkers Ju 88s during the war.

As early as 25th June 1941, three days after the German invasion of the Soviet Union, a Ju 88 from bomb squadron KG 54 "Totenkopf" crash-landed in a field north of Kiev. The German crew – pilot Corporal Hans Hermann, navigator Corporal Hans Kratz, gunner Corporal Adolf Appel and radio operator Sergeant Wilhelm Schmid – disembarked and surrendered to Soviet farmers working in the field. They said that they were opposed to the attack on the Soviet Union and that they had dropped their bombs in the Dnieper River and intended to surrender to the Soviet authorities. They were immediately taken into custody by the Soviet security police, to whom they repeated the same story.

A few days later, leaflets were dropped over German lines with an appeal signed by the airmen: "Brothers, airmen and soldiers, follow our example. Leave the murderer Hitler and come over to Russia!" Whether this was voluntary or whether the airmen were forced to sign the message under threat of execution was never established.

On the night of 29th-30th June 1942, two other Germans took off in a Ju 88 from an airbase on the Baltic coast with the intention of flying over to Britain and surrendering, but the aircraft crashed en route in the Kilsfjord in Norway. One of the occupants drowned, but the other, Willi Voss, was rescued by Norwegian civilians. However, that wasn't much help; interrogation by the Gestapo revealed the reason for his flight, and he was taken to Germany, where he was sentenced to death and executed. However, his aeroplane survived. It was recovered in August 2000, restored and is now on display at the Deutsches Technikmuseum in Berlin.

AMONG THE JU 88 pilots who switched sides during the war were two squadron commanders. One was the commander of KG 51 "Edelweiss", Major Egbert von Frankenberg und Proschlitz. Like Prince Wittgenstein, he belonged to a military nobility dating back to the Middle Ages. His family tree was full of knights, field commanders and generals.

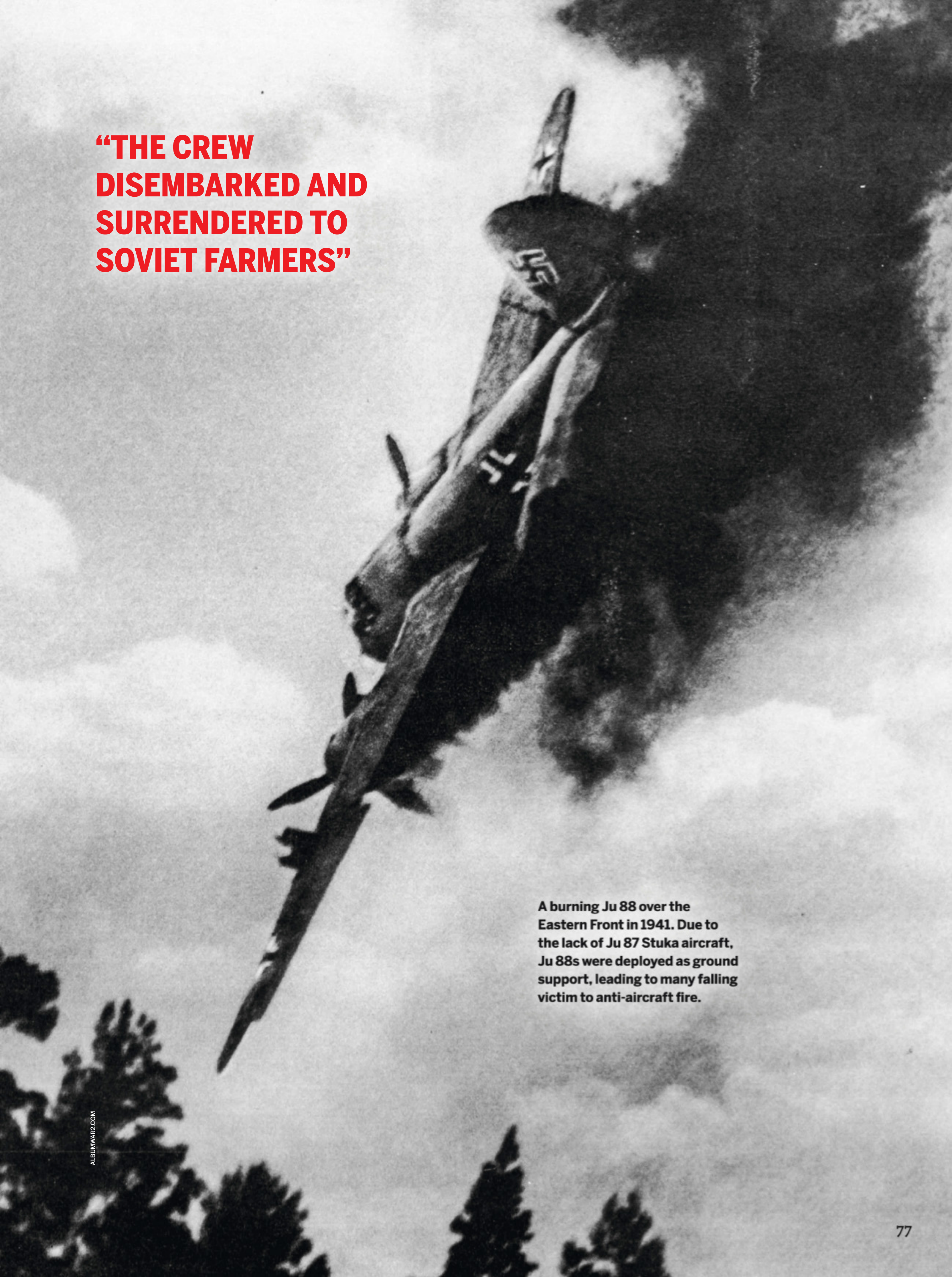
On 1st May 1943, von Frankenberg landed his Ju 88 safely behind Soviet lines. He brought with him all the documents from the staff of KG 51. Von Frankenberg himself cited magnetic anomaly as the reason for landing in enemy territory – but by the evening of the next day, he was speaking on Radio Moscow, urging the Germans to lay down their arms. In captivity, Egbert von Frankenberg joined the anti-Nazi National Committee for a Free Germany and later helped form the similar League of German Officers, both under Soviet supervision.

The second head of a German bomber squadron to switch sides was Major Walter Lehweß-Litzmann. He had flown many missions over Britain and on the Eastern Front as commander of bomber squadron III./KG 1 when in January 1943 – the same time von Frankenberg took over KG 51 – he was appointed commander of KG 3 "Blitz". KG 3 suffered heavy losses on the Eastern Front in 1943; during Lehweß-Litzmann's command, the squadron lost its entire aircraft inventory twice, as well as 204 airmen killed or missing, and 62 wounded. On top of that, the ground staff at the airbase were infiltrated by partisans. On 7th September 1943, a smuggled bomb exploded on board Lehweß-Litzmann's Junkers Ju 88. The crew was taken prisoner.

On 29th October 1943, Lehweß-Litzmann was awarded the Knight's Cross posthumously (he had been written off as missing). However, this was something Hitler would come to regret, as it wasn't long before Lehweß-Litzmann made himself heard again – this time as a member of the National Committee and the League of German Officers.

Lehweß-Litzmann was released shortly after the end of the war and settled in East Berlin, where he co-founded the *Berliner Zeitung* newspaper in 1945. A few years later, he joined the East German air force, and between 1959 and 1970 he worked for the East German airline Interflug. Following a

“THE CREW DISEMBARKED AND SURRENDERED TO SOVIET FARMERS”



A burning Ju 88 over the Eastern Front in 1941. Due to the lack of Ju 87 Stuka aircraft, Ju 88s were deployed as ground support, leading to many falling victim to anti-aircraft fire.

ALBUMWAR2.COM

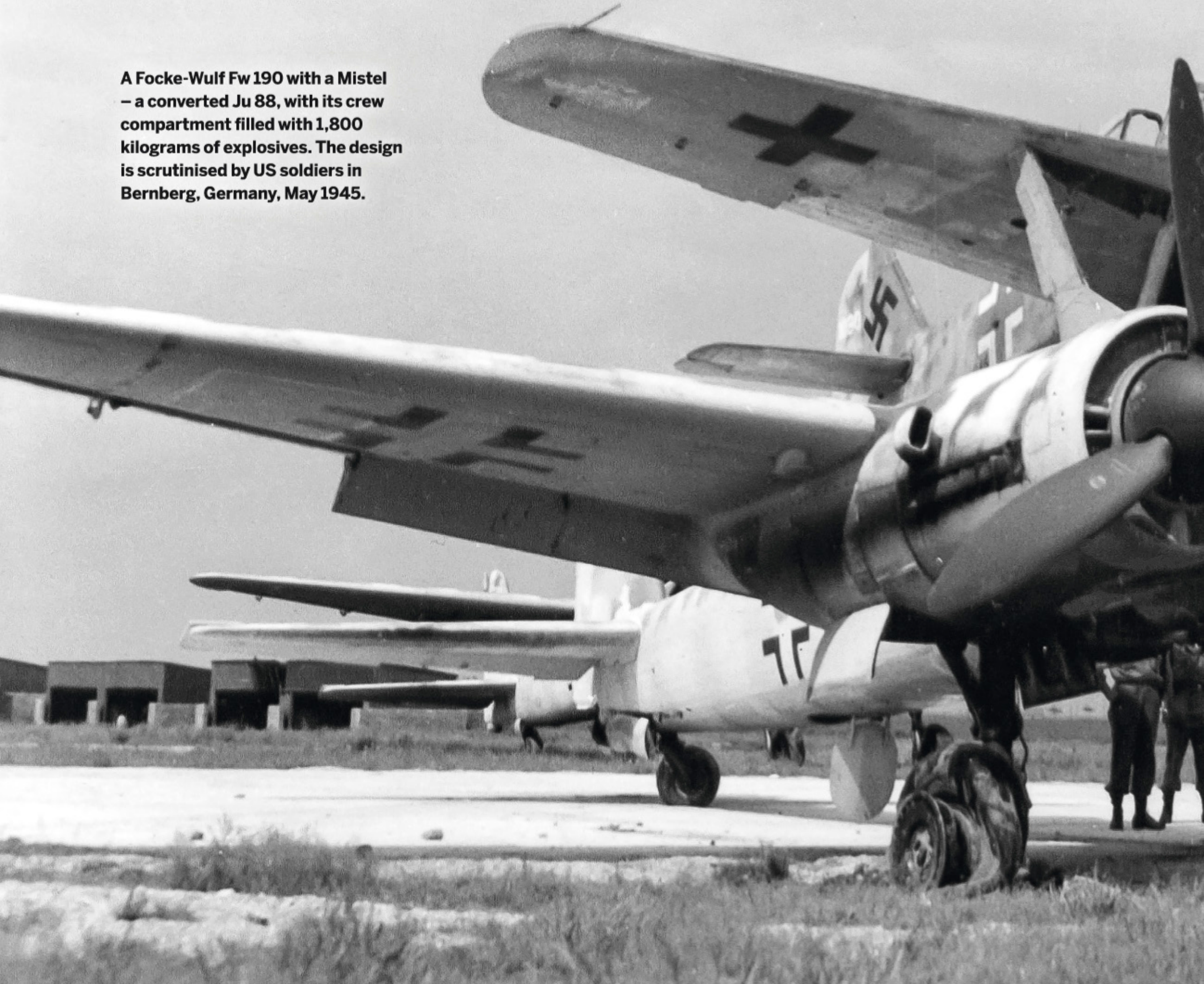
car accident in which he was seriously injured in 1970, he took a disability pension and died in 1986. In 1994, his son Jörn Lehweß-Litzmann published his father's autobiography under the title *Absturz ins Leben* (roughly *Crashing into Life*).

After his release, von Frankenberg also chose to settle in East Germany. He joined the National-Democratic Party of Germany (NDPD), a semi-liberal party affiliated with the state-run Socialist Unity Party of Germany (SED), and became a senior member of the Thuringian state government. After the fall of the Wall, the NDPD merged with the old West German liberal party, the Free Democratic Party (FDP), and the now 81-year-old von Frankenberg decided to retire. He died in Berlin on 15th March 2000.

A Romanian aircrew also took a Junkers Ju 88 when they deserted on 22nd July 1943 by flying to British Cyprus, where they surrendered.

THE LAST USE of the Ju 88 was as a *Mistel* (Mistletoe) – a pilotless, explosive-filled, single-engine attack plane targeting the Oder bridges in April 1945. The question is whether there was any aircraft as versatile during World War II – and as successful in its various uses – as the Junkers Ju 88.

But what happened to the 'little prince'? Heinrich Prinz zu Sayn-Wittgenstein was shot down the following night – 21st/22nd January 1944 – by a British Mosquito night fighter crewed by Pilot Officer Desmond Snape and Flying Officer L Fowler of the RAF's No. 141 Squadron. Wittgenstein first ensured that his crew parachuted out, but failed to bail out himself, and fell to his death. (Snape and Fowler died later, on 24th February 1944.)



A Focke-Wulf Fw 190 with a Mistel – a converted Ju 88, with its crew compartment filled with 1,800 kilograms of explosives. The design is scrutinised by US soldiers in Bernberg, Germany, May 1945.

Indeed, if Ju 88 bomber pilot Klaus Häberlen saved Hitler in February 1943, Snape and Fowler may have done so, too – unwittingly. Prinz zu Sayn-Wittgenstein's mother revealed after the war that, "He was boundlessly disillusioned and boundlessly disappointed. In 1943 he contemplated the thought of shooting Hitler." This was confirmed in the memoirs written by Countess Tatiana von Metternich, with whom Prince Wittgenstein socialised. Another woman in his close circle was the exiled Russian princess Marie Vassiltchikov. She and her sister Tanya revealed that in January 1944, Prince Heinrich had decided to assassinate Hitler the next time they met – when he received his next honour, the Knight's Cross with Oak Leaves and Sword. He made the decision just a few days before his death. On 23rd January 1944, Hitler awarded him the honour – posthumously.

> "THE QUESTION IS WHETHER THERE WAS ANY AIRCRAFT AS VERSATILE DURING WWII"

Christer Bergström is a writer on military and aviation history.

NARA

Battle of Stalingrad

WHY GERMAN

The Luftwaffe's failure to carry supplies to the trapped 6th Army can be blamed neither on the weather nor on too few transport planes. Christer Bergström explains how these popular theories don't hold up; instead he points to the role played by fighter aircraft.

Text: **CHRISTER BERGSTRÖM**

A Junkers Ju 52 outside Stalingrad. On flights to the city, the planes were filled with supplies for the encircled 6th Army, while on the return journey, wounded soldiers were transported out.

SCHERL/SUEDDEUTSCHE ZEITUNG PHOTO/RITZAU SCANPIX

AIRLIFT FAILED

Junkers Ju 52

★ The German Junkers Ju 52 transport aircraft started life as a civilian plane in the 1930s. When the Luftwaffe was created in 1935, the Ju 52 became its standard transport plane for both cargo and paratroopers. During the Spanish Civil War and the Polish campaign in 1939, it was also used as a bomber. The plane could carry two tonnes of cargo, 18 soldiers or 12 stretchers. The three-engine aircraft had a top speed of only 265 km/h making it extremely vulnerable, despite its three machine guns.

On Christmas Eve morning 1942, the large German transport airfield in the windswept plains 200 kilometres west of Stalingrad was in a state of panic. Armoured Soviet forces had entered the village of Tatsinskaya a few kilometres to the north during the night, and now their troops were preparing to attack the airfield. A complete disaster was in the offing – Tatsinskaya was the main base for the armada of German transport planes flying in supplies to the encircled 6th Army in Stalingrad, and there were insufficient troops to defend the airfield.

In temperatures below freezing, and visibility severely restricted by snow and cloud cover that hovered just 50 metres above the ground, the weather was what aviation meteorologists term QBI – aircrews have to rely on their instruments, not visual cues – and there was an immediate risk of ice forming on the planes. It was one of the worst days for flying during the entire Battle of Stalingrad. But now Soviet tanks were rolling up to the airfield, and their shells threw up huge fountains of earth around the stationary aircraft. Some planes were hit and wreckage was thrown far and wide.

Within 20 minutes, 124 transport aircraft had taken off for the new Salsk airbase, 130 kilometres to the south-west, where they all landed without incident in equally appalling weather. Of the 170 transport aircraft at Tatsinskaya, only 50 failed to leave, many of them shot down by Soviet fire. This was a remarkable achievement by the German pilots and demonstrates their extremely high level of expertise in instrument flight.

There was only one problem. This was the transport air force that, for three or four weeks before the evacuation, had explained away the low number of flights to Stalingrad as being caused by bad weather, the risk of icing and the fact that up to 80 percent of the aircraft were unflyable.

IT IS WELL known that the German airlift to Stalingrad failed to provide the encircled 6th Army with adequate supplies. Instead of the promised 500 tonnes a day, the Luftwaffe was unable to deliver more than a daily average of 94 tonnes. Some days, the transport planes didn't take off at all.

As a result, the 6th Army collapsed. When it surrendered on 31st January 1943, 91,000 malnourished soldiers were all that remained of what had been Germany's strongest army. For more than a month, the encircled troops had been forced to live on 50 grams of bread a day. In the first weeks after the surrender, 50,000 German prisoners of war died from diseases to which their bodies had lost all resistance. This was a direct result of the failure of the German airlift.

One of the most persistent myths of World War II is that the army at Stalingrad could not be supplied

★ FACTS

30,000 FLOWN OUT OF CITY

Between 22nd November 1942 and 30th January 1943, a total of 6,591 tonnes of supplies were delivered on almost 4,000 individual flights by transport aircraft to Stalingrad. On the return journey, the aircraft carried 24,760 wounded and 5,150 key personnel or experts, including nine generals.

BUNDESARCHIV, BILD183-B22222 / CC-BY-SA 3.0

Infantrymen drag a 75-millimetre gun through the ruins during the siege of Stalingrad in 1942.

ULLSTEIN BILD/GETTY

A German Heinkel He 111 bomber at Gumrak airfield in January 1943. Such aircraft were used to bring in supplies to the encircled army in Stalingrad.

from the air because there were not enough transport planes available, and the bad weather made any major operation impossible.

FIRST, THE LARGEST concentration of transport aircraft in the world was already at the disposal of the 6th Army when it was surrounded on 22nd November 1942; an armada of 320 three-engine Junkers Ju 52s was by then engaged in an airlift operation to Stalingrad that had been organised and ongoing since August 1942. In addition, 30 Heinkel 111 bombers were also being used for transport purposes. Because of the poor road network and the long distances between German depots in the occupied Soviet Union, it was necessary to supply the advancing 6th Army from the air from the very beginning of the German offensive.

As each Ju 52 could carry a load of two tonnes and an He 111 could carry 1.2 tonnes, simple maths shows that the 500 tonnes promised by Luftwaffe chief Hermann Göring would not even require each aircraft to make one flight a day.

By the time Göring made this pledge in November 1942, fewer transport planes had flown in an average of 442 tonnes of supplies to Stalingrad over the previous three months. The Luftwaffe had also scraped together all available transport aircraft from flight schools and various staffs, and sent them as reinforcements to the transport aircraft armada at Stalingrad, which in a short time grew to an impressive size. Thus, all the conditions were in place to handle a daily average of 500 tonnes.

“ALL THE GERMAN FIGHTERS COULD ACHIEVE AGAINST NUMERICAL SUPERIORITY WAS A PINPRICK”

DURING AN EARLIER air supply operation to an encircled German force, at Demyansk in early 1942, a similar-sized fleet of transport aircraft had managed to fly in 273 tonnes a day – three times more than was later managed at Stalingrad. And the conditions at Stalingrad were in several respects much more favourable than at Demyansk. There, the Germans were limited to a single airfield with only one runway, while the much larger Stalingrad pocket had several large and well-equipped airbases. In addition, the Germans in Stalingrad had installed radio beacons that allowed transport aircraft to locate the runways in poor visibility. These had been absent in Demyansk.

Every week, new aircraft arrived from all corners of Europe to reinforce Stalingrad's transport air force. Among these were, in addition to several Ju 52s, two flotillas of twin-engine Ju 86s, a squadron ▶

of the new twin-engine He 177s, four-engine Focke Wulf 200s and some of the gigantic four-engine Junker 290s capable of carrying a load of 45 tonnes. The crews that flew these machines were undoubtedly the world's most experienced airmen in terms of instrument flight.

HISTORIE ARCHIVE

Hermann Graf scored his 200th air victory over Stalingrad.

SO, HOW DID the airlift become such a catastrophic failure? To answer that question, we have to look at what was happening on the other side. As German and Soviet soldiers fought furiously over the ruins of Stalingrad, one of the biggest air battles of World War II was taking place above their heads. During the months of August and September 1942, both sides engaged the cream of their respective air forces in a war for air supremacy over the contested city. Every day, huge air battles raged.

It ended in a total victory for the German air force, which brought together some of its finest fighter pilots in what is probably the greatest concentration of flying aces ever seen. In fact, nearly all of the German fighter pilots at Stalingrad were aces by US standards (having at least five air victories).

The foremost among them, Captain Hermann Graf, so savaged the Soviet formations that he shot down 62 aircraft in one month. This brought him – as the first airman in the history of the war – to a total of 200 air victories.

In the Soviet air force, the losses were so high that large numbers of pilots were drafted in who had received no more than basic flight school training. The result was even greater losses. Finally, the Soviets were forced to do something rather uncharacteristic of the Red Army during World War II – they gave up. In early October 1942, they surrendered the airspace over Stalingrad to the Germans and cancelled most of their daytime air operations in the region. This ended what was probably the biggest air battle ever fought over such a small area – a single city.

Ju 87 Stuka over a burning Stalingrad, October 1942.

HISTORIE ARCHIVE

JUST A FEW weeks later, however, the Germans found themselves in crisis on several other fronts. In early November 1942, Erwin Rommel's forces were crushed at El Alamein. A few days later, the Allies landed in the French colonies of Morocco and Algeria, and advanced eastwards behind the Axis powers in North Africa. And finally, on 25th November, the Red Army launched a major offensive west of Moscow.

With the Soviet air force out for the count at Stalingrad, the Germans decided to move most of their fighter aircraft to these other crisis areas. Hermann Graf was taken out of action altogether because Propaganda Minister Joseph Goebbels did not want to risk the psychological backlash that would result from the death of such a great war hero.

Meanwhile, the Red Army was busy building up the forces that would carry out Operation Uranus, the attack that would encircle the Germans inside Stalingrad. This entailed not only the deployment of large air forces to the area, but also intensive training of the pilots involved. The Soviet air force at Stalingrad thus became much larger and stronger than it had been just a few months previously. Among other things, special elite units were formed that consisted only of very experienced and skilful pilots.

At the start of Operation Uranus, the Soviet attack forces had more than 1,500 fighter aircraft at their disposal. The renowned Marshal Aleksandr Novikov, Soviet chief marshal of aviation, arrived in the area to personally direct and organise Soviet air operations.

ALL THE GERMANS had that could go up against this mighty air force were the 50 or so Messerschmitt Bf 109 fighters that were left behind in the Stalingrad region when all their other fighter planes were transferred elsewhere. The Luftwaffe also had around 600 bombers and reconnaissance

Wounded Germans travelling from Stalingrad in a Junkers Ju 52 in January 1943. The aircraft could carry 12 soldiers on stretchers.

SCHERL/SUEDDEUTSCHE ZEITUNG PHOTO/RITZAU SCANPIX

aircraft in the area, but only the fighters could challenge the Soviets for air supremacy.

THE SOVIET AIR force controlled the airspace from the very first moment of the counteroffensive. The German fighter pilots – one of whom was the famous Johannes Steinhoff – were still more experienced and skilful, however, than most of the pilots on the Soviet side. On 28th November, Steinhoff and his fighter squadron of Jagdgeschwader 52 pounced on formations of Soviet Il-2 Shturmovik attack aircraft with fighter escorts and shot down a dozen of the Soviet machines with no casualties of their own. By downing two fighters, Steinhoff himself claimed his 114th air victory. One of his pilots, Lieutenant Gerhard Barkhorn, achieved his 82nd. Two days later, Major Wolf-Dietrich Wilcke, the commander of the German fighters in Stalingrad, won his 140th air victory. Against such super-aces – Steinhoff by then had racked up 720 combat flights since the start of the war – the Allied air forces stood their ground.

All the German fighters could achieve against numerical superiority was a pinprick. The air over the battlefield was teeming with Soviet aircraft. None were more aware of this than the German transport pilots assigned to fly their heavily loaded, slow and lightly armed Junkers Ju 52s from Tatsinskaya and neighbouring Morozovsk to Stalingrad. These soon became a popular target for Soviet fighter pilots. "Flying transport aircraft ... into the Stalingrad pocket ... was actually suicidal," recalled Gerhard Kerscher, who himself piloted a Ju 52 in the airlift to Stalingrad.

"THE SOVIET AIR FORCE CONTROLLED THE AIRSPACE FROM THE VERY FIRST MOMENT OF THE COUNTEROFFENSIVE"

ON THE LAST day of November, Lieutenant Colonel Nikolai Kitaev, commander of the Soviet 131st Fighter Regiment, was on patrol with a formation of four Lavochkin La-5 fighters. Kitaev was an ace with eight air victories to his credit – a number he had raised to 29 by the time he was killed in action just over a year later. Suddenly, he spotted four German fighters shifting strangely from side to side a few kilometres away. Looking more closely, Kitaev noticed several white-painted Junkers 52 transport planes flying low over the snow-covered ground far beneath the Bf 109s. Had it not been for the German fighters, Kitaev would never have seen them.

Kitaev ordered two of his pilots to attack the transport planes while he, together with his second ▶

in command, took on the fighter escorts. Kitaev attacked first. He shot down a Bf 109 and tied up the other three in a swirling chase. This allowed the other two Soviet fighter pilots to take on the Ju 52s. By the time they ran out of ammunition, five of the three-engine German aircraft had been reduced to burning wrecks lying on the steppe.

German fighter pilot Hans Ellendt, who flew as Gerhard Barkhorn's second in command in Steinhoff's squadron during the Battle of Stalingrad, remembered how the transport pilots soon changed their minds about fighter escorts:

"They no longer wanted a fighter escort because, quite rightly, they felt it attracted the attention of the Russian fighter pilots. After all, we fighter pilots had to circle in the air above them in order not to lose our tactical advantage when the Russians came. In fact, the transport aircraft had a better chance of survival if they flew at very low altitude, where they could hope to avoid detection. Preferably, they flew in bad weather."

ON 4TH DECEMBER, 67 transport planes took advantage of heavy snowfall and thick fog to fly in 141 tonnes of supplies. Only one of them was shot down. Three days later, nearly 200 transport planes carrying a total of 350 tonnes of supplies landed in Stalingrad. Marshal Novikov, the Soviet air commander, realised that something had to be done. He now ordered the 8th and 16th Air Armies – which together had around 250 fighters – to concentrate solely on stopping the German transport planes from reaching Stalingrad.

On 8th December, Soviet fighters tore the German transport aircraft units to pieces. According to German loss statistics – which were far from comprehensive for the Battle of Stalingrad – 20 out of 140 transport aircraft deployed were lost that day. This meant a loss ratio of 14 percent, which is totally unacceptable for any military force. On 11th December, 14 of some 130 transport planes were shot down; those that made it through delivered 200 tonnes of supplies – nothing like enough.

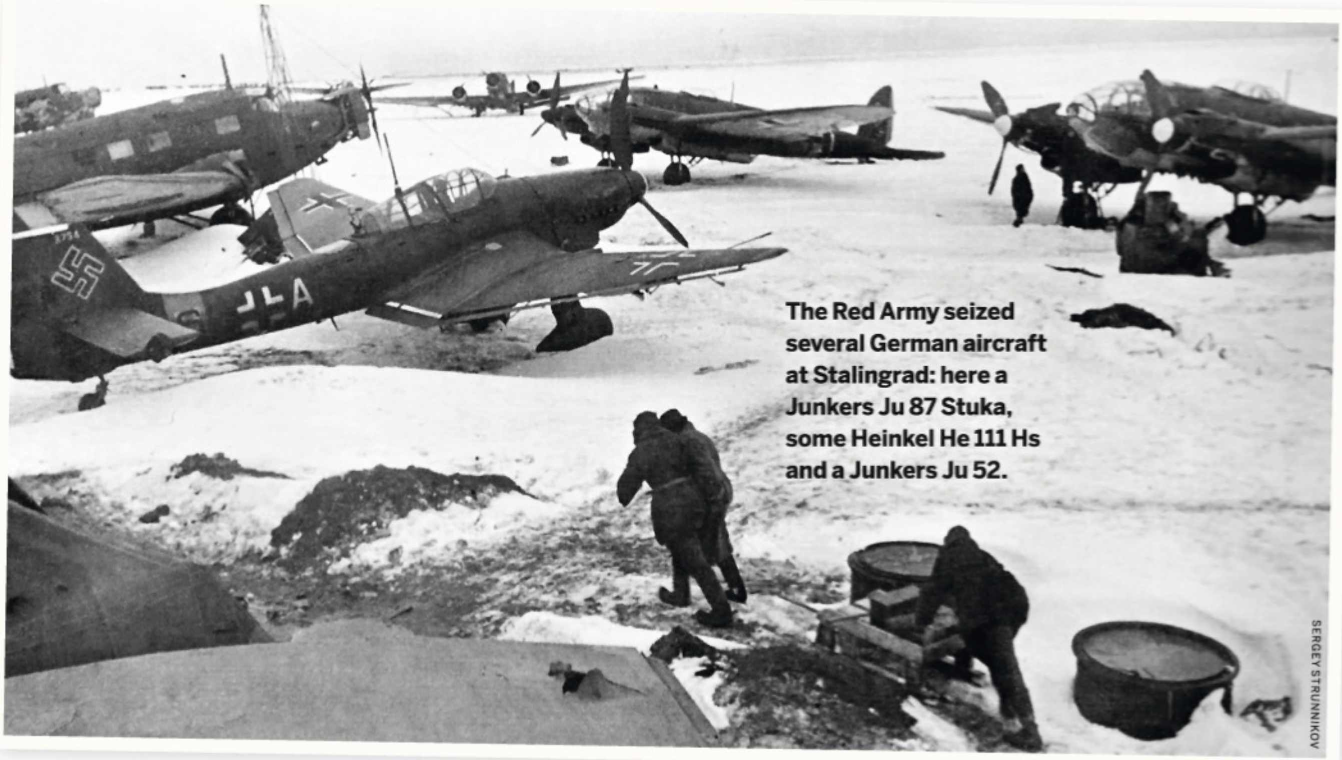
At this point, General Friedrich Paulus, commander of the 6th Army, was forced to cut the rations for his men by 30 to 50 percent. Hunger set in for the besieged German soldiers.

And it would get worse. On 12th December, 20 transport planes were shot down, while many others were forced to turn back. Only 55 made it to Stalingrad. One of the German transport pilots, Fritz Linke, noted in his diary after a flight to Stalingrad: "We are faced with the usual opposition: anti-aircraft fire, bomb-dropping, Shturmoviks, etc."

Every day the 6th Army blasted the German air transport units with complaints about the fact that more transport planes were not being deployed. The usual answer was that it was too difficult to fly because of ice on the planes. But on 18th December, with the sun shining from a clear sky, a mere ten tonnes were delivered to Stalingrad by air. On that day – and onwards – the air transport units justified

Soviet soldiers storm a German airfield. As the Germans lost airbases, the amount of supplies flown into the city decreased. In the background, a Fw 189 recon aircraft.

BILDARCHIV PREUSSISCHER KULTURBESITZ



The Red Army seized several German aircraft at Stalingrad: here a Junkers Ju 87 Stuka, some Heinkel He 111 Hs and a Junkers Ju 52.

SERGEY STRUNNIKOV

their low activity by saying that most of the aircraft could not fly due to technical faults. But on 20th December, when bad weather prevailed and Soviet aircraft temporarily disappeared from the airspace around Stalingrad to be used against the German counteroffensive in the south, almost 300 tonnes were flown into Stalingrad. However, with the return of the Soviet aircraft on 22nd December – when the transport airbase at Pitomnik was heavily bombed – the number of transport planes that landed dropped to 33. The following day the figure was 72. On 24th December, 120 transport planes took off – not to fly to Stalingrad, however, but to escape the Soviet forces that had broken through to their own airbase at Tatsinskaya.

At times, the transport aircraft units claimed that they could not fly because the facilities in Stalingrad weren't suitable for planes to land. Inside the city, General Paulus was furious, raging in a telegraph on 18th January that all the airfields were in just as good a condition as before, and when the pilots claimed otherwise, it was only because of their own lack of readiness.

ON 16TH JANUARY 1943, the hard-nosed Field Marshal Erhard Milch arrived at the transport aircraft units to investigate what was really going on. That day, only 56 transport aircraft were reported to be operational. They flew in 82 tonnes of supplies on 17th January.

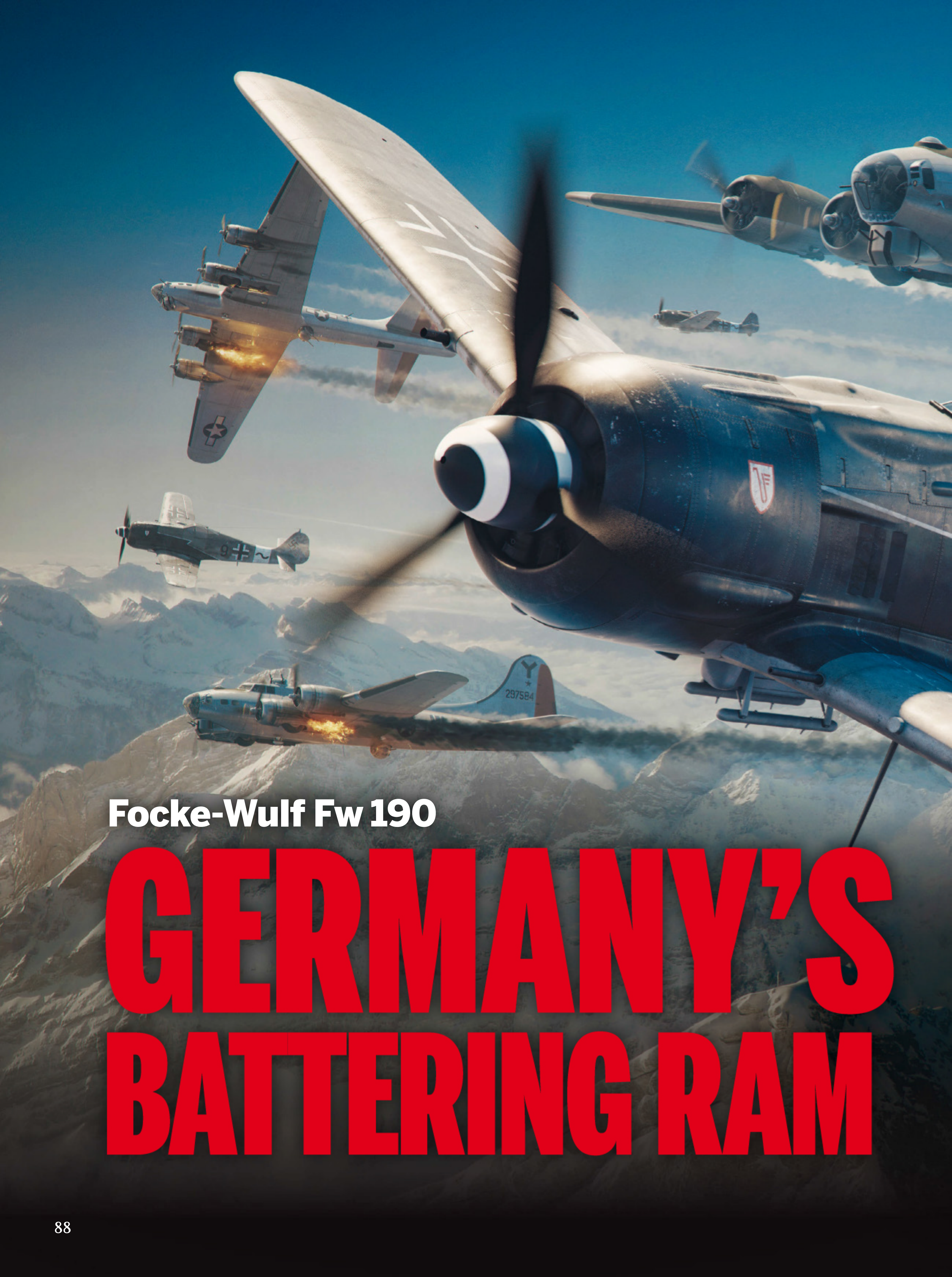
Milch took control with an iron fist. First, he fired the transport aircraft commander, Major General Viktor Carganico. Then he threatened anyone who betrayed him with court martial and declared that from now on, flights would go ahead. "I will have any commander acting against my orders shot," Milch declared.

"I WILL HAVE ANY COMMANDER ACTING AGAINST MY ORDERS SHOT"

This produced results. On 21st January, 200 tonnes of supplies were flown into Stalingrad. But the effort came too late. The great Pitomnik airbase had already fallen to the Red Army, and on the evening of 21st January, Gumrak also fell. In the final days of the crisis, German transport planes were reduced to parachuting supplies into an ever-shrinking area to the encircled 6th Army. Two hundred tonnes of supplies were dropped between 27th and 29th January – most of which ended up in the hands of the Red Army.

WHEN THE 6TH Army surrendered on 31st January 1943, not only had the German army suffered its biggest military setback ever, but it was also a major defeat for the Luftwaffe. Between 19th November 1942 and 31st January 1943, the Luftwaffe lost 900 aircraft on the Eastern Front. Of those, 488 were transport aircraft. It was a blow from which German transport aircraft, in particular, would never recover. For Luftwaffe chief Hermann Göring, the Battle of Stalingrad meant a permanent loss of prestige.

Christer Bergström has written some 20 books on World War II.



Focke-Wulf Fw 190

GERMANY'S BATTERING RAM

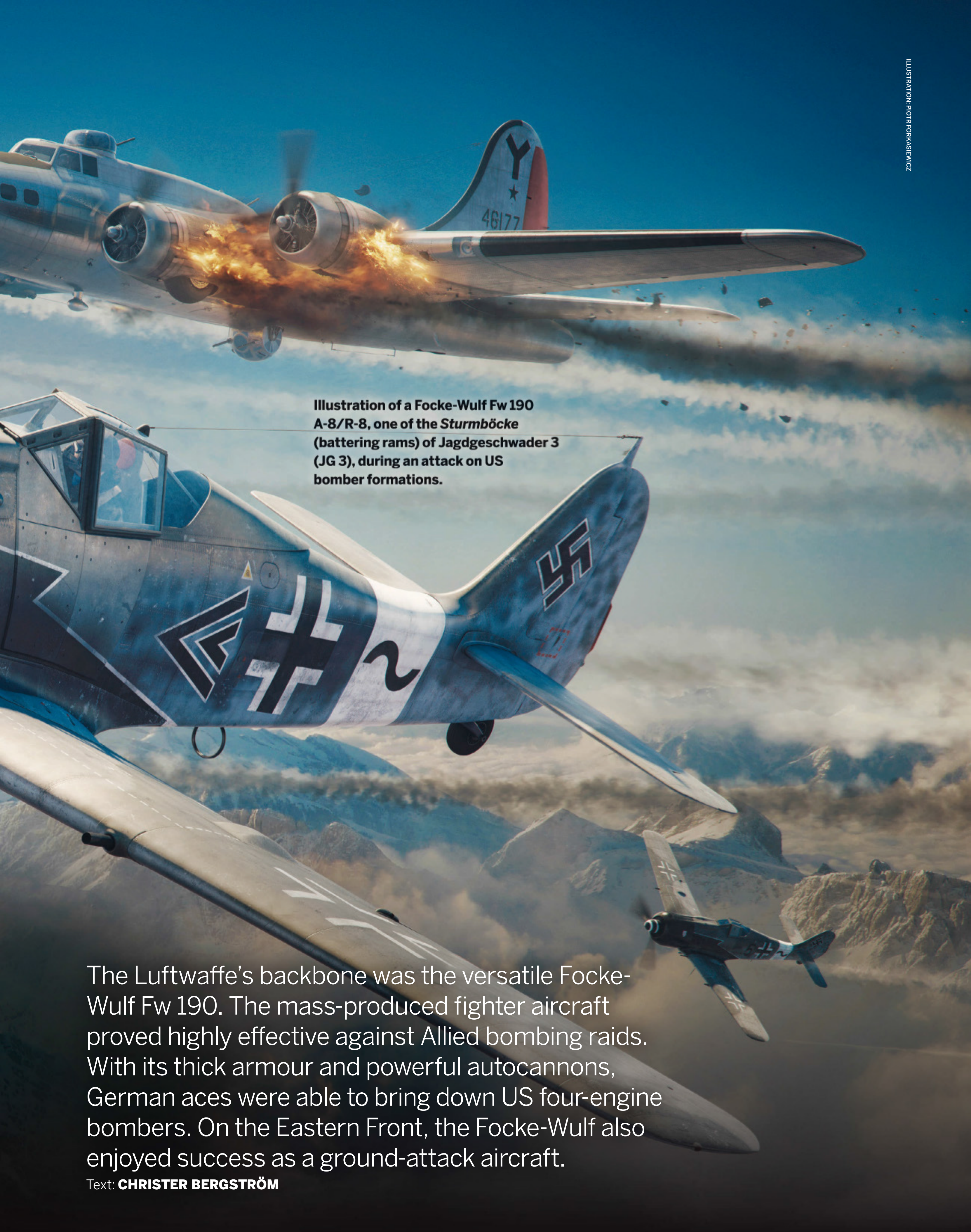


ILLUSTRATION: PIOTR FORKASIEWICZ

Illustration of a Focke-Wulf Fw 190 A-8/R-8, one of the *Sturmböcke* (battering rams) of Jagdgeschwader 3 (JG 3), during an attack on US bomber formations.

The Luftwaffe's backbone was the versatile Focke-Wulf Fw 190. The mass-produced fighter aircraft proved highly effective against Allied bombing raids. With its thick armour and powerful autocannons, German aces were able to bring down US four-engine bombers. On the Eastern Front, the Focke-Wulf also enjoyed success as a ground-attack aircraft.

Text: **CHRISTER BERGSTRÖM**

“Achtung, Comrades! Close formation for the assault! We’re going to attack, keep calm, just follow me!”

Major Walther Dahl felt his heart rate rise as he piloted his Focke-Wulf 190 fighter down towards a formation of four-engine US B-24 Liberator bombers. Following him was an entire squadron of Fw 190s. These were no ordinary fighters, but part of a specialised bomber-killer unit dubbed a *Sturmgruppe* (Storm group), and were both heavily armoured and armed with 20-mm and 30-mm autocannons.

These particular models, Fw 190 A-8/R8s, were specially designed so that, thanks to their protective armour, they could slowly ‘creep up’ behind the dense formations of US four-engine bombers without having to worry about the fire from their numerous machine guns. From there they would then methodically shoot them down one by one. The fighters were called *Sturmböcke* (battering rams) and their MK 108 autocannons were dubbed “pneumatic hammers” – illustrating their effectiveness against a four-engine bomber. Three hits with one of these were usually enough to bring down a B-24 Liberator or B-17 Flying Fortress.

DAHL LOOKED DOWN. Five thousand metres below him, vast green fields spread out. It was mid-summer, 7th July 1944, and Dahl’s heart pounded as they approached the large US bomber formation from behind. He radioed again: “Rabazanella!”

The Sturmgruppe commander’s battle cry raised the blood of the young and eager German fighter pilots. As one, they swept into a wide V formation, and watched as the twin rudders of the Liberators seemed to grow tall like houses in front of them. Then they all opened fire.

“THREE HITS ... WERE USUALLY ENOUGH TO DESTROY A B-24 LIBERATOR”

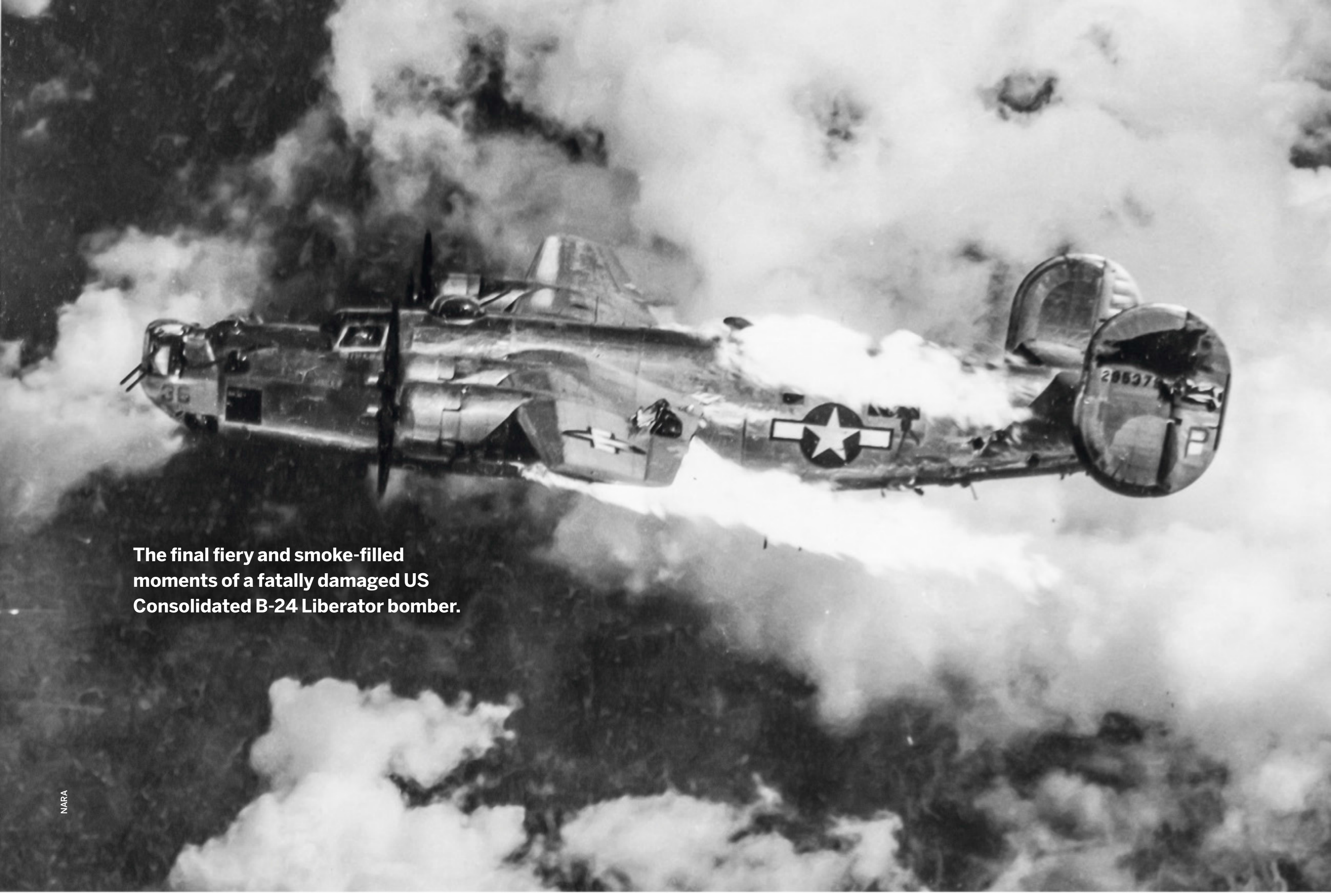
A terrible noise erupted as 400 automatic guns burst into action. With their left hand, the pilots adjusted their velocity to match the bombers’ low speed so that they could maintain their position just behind the enemy, and with both feet on the rudder pedals and their right hand firmly gripping the control stick, they battled the powerful air current. They fired in short bursts, using the thumb-operated trigger.

ONE BURST RESULTED in two large explosions on one bomber’s left wing and pieces of aluminium were torn off. The next short burst was too high; the Fw-190 had bounced into the air stream from the bomber’s propeller. A quick correction and another short press on the trigger – this time there was a loud explosion in the bomber’s internal left engine, which began to smoke in a cloud of swirling sheet metal parts. The Fw 190’s pilot cut his speed, throttling back slightly to maintain the appropriate firing distance of 100 metres, and then fired another salvo. A loud bang caused shattered parts to spray from the interior of the bomber, and in the next moment the entire engine was torn loose and plummeted to the ground with a tail of fire behind it, like a comet.

The German fighter pilot pulled back on his stick, rising even as the engine wailed in protest, and

A Focke-Wulf Fw 190 G-1 fighter-bomber carrying a 250-kg bomb plus 300-litre drop tanks under the wings.

IMPERIAL WAR MUSEUM


The final fiery and smoke-filled moments of a fatally damaged US Consolidated B-24 Liberator bomber.

NARA

passed over what had once been a tight formation of US bombers. For a few seconds he saw only the light clouds high in the blue sky above him. Then he swung round.

THE SIGHT THAT met him below defied description. The air above the picturesque landscape was full of burning, crashing American bombers tumbling round and round. Here a wing flew off one Liberator, there the fuselage broke off another. One machine flared up like a sparkler, and another descended slowly downwards with its pilots dead and the rest of the crew parachuting out of the machine in panic. Four men made it out before the plane exploded in a cascade of fire.

Major Dahl was pleased to see a whole series of crop circles appear in the fields below. This meant that the Americans had dropped their bombs to escape more quickly. The oil industry in Lützkendorf was saved – this time at least.

When Dahl looked up, he could see that Bf 109s were keeping the US's Mustang fighters at a safe distance. The Sturmböcke were keen to avoid meeting them. The heavy armoured Fw-190 was more than 130 km/h slower than the Mustangs.

Dahl reassembled his aircraft and shouted over the radio: "To all young brothers: close the formation tighter for the next attack! Those who can't fire, ram! Rabazanella!"

AFTER THE BATTLE, when Dahl was one of the first to land at the airbase, he hurriedly counted the number of Focke-Wulf that had landed. Out of 102, 92 returned safely. Five had been shot down, and five others had made an emergency landing on the ground.

He was pulled from his thoughts by a red-faced corporal, flushed from running. He told him that Major Müller-Trimbusch, chief of staff to the fighters general in the Luftwaffe high command, had arrived at headquarters. When Dahl arrived, he was greeted by an exuberant Müller-Trimbusch:

"Oh my God, Dahl! That was fantastic! The general has come to Illesheim and is waiting for you there!"

"The general" was Adolf Galland, the famous flying ace from the Battle of Britain who had been appointed *General der Jagdflieger* (general of fighters) in 1941.

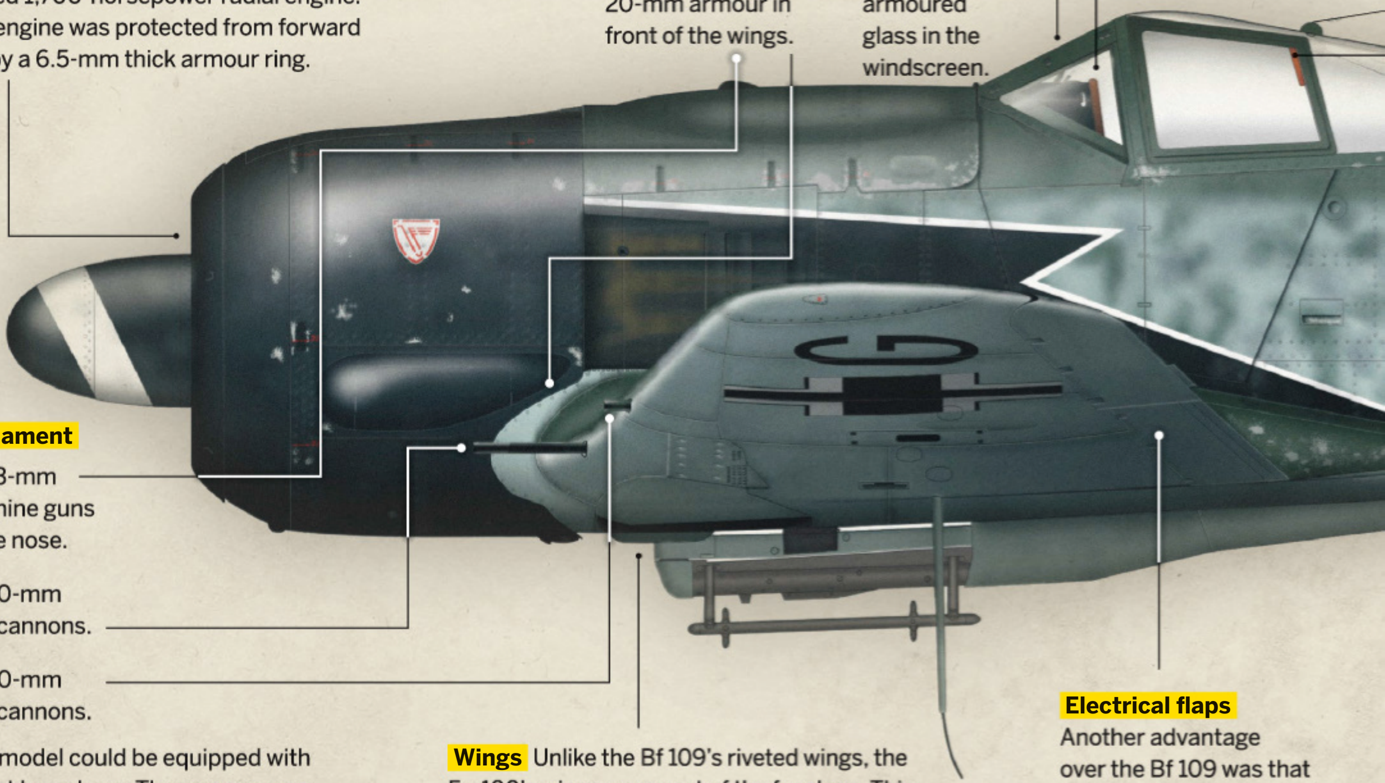
For more than a year, Galland had been desperately trying to get at the US's four-engine bombers, whose dense formations and heavy armament, typically a dozen 12.7-mm machine guns per plane, had inflicted terrible losses on his fighter ►

HISTORIE ARCHIVE

Walther Dahl was nicknamed 'Rammdahl' after he claimed to have rammed a B-17 in his Fw 190.

Focke-Wulf 190 A-8/R8 – "Sturmböck"

★ The Fw 190 A was fully developed with its A-8 model. It became the most widely produced version, with 6,655 units produced between February 1944 and February 1945.



Engine BMW 801D-2, 14-cylinder air-cooled 1,700-horsepower radial engine. The engine was protected from forward fire by a 6.5-mm thick armour ring.

Armour plating 20-mm armour in front of the wings.

50-mm armoured glass in the windscreen.

30-mm armoured glass in side windows.

Armament 2 x 13-mm machine guns in the nose.

2 x 20-mm autocannons.

2 x 30-mm autocannons.

This model could be equipped with rocket launchers. The weapon was used with great success to disperse US bomber formations.

Wings Unlike the Bf 109's riveted wings, the Fw 190's wings were part of the fuselage. This design meant that the Fw 190 could dive steeply (950 km/h) without tearing off its wings.

Electrical flaps Another advantage over the Bf 109 was that the Fw 190's wing flaps and trim tabs were operated electrically.

▸ units. But now Major Dahl had shown where the solution lay with his heavily armoured Sturmböcke that were almost invulnerable to frontal fire.

IN A SINGLE battle on 7th July 1944, the Germans shot down no fewer than 40 US bombers – this figure came from US reports, which often concealed their own losses. The Germans themselves, who could count the wreckage on the ground, claimed that 71 had been shot down.

In either case, it was an overwhelming victory and something that both shocked and demoralised the surviving bomber crews. One American, Second Lieutenant Marion Havelaar, recounted afterwards the horrifying sight that met him when the German fighters that had attacked him had left, and he no longer had to concentrate on firing on them.

Within the space of a few minutes, the sky – which had been full of Flying Fortresses – was suddenly empty. Not a single aircraft in Havelaar's formation remained. The sight proved so frightening and sickening that it made the lieutenant's stomach turn over.

"THE FW 190'S ROLL RATE ... WAS SUPERIOR TO ALL OTHER BRITISH AND US FIGHTERS"

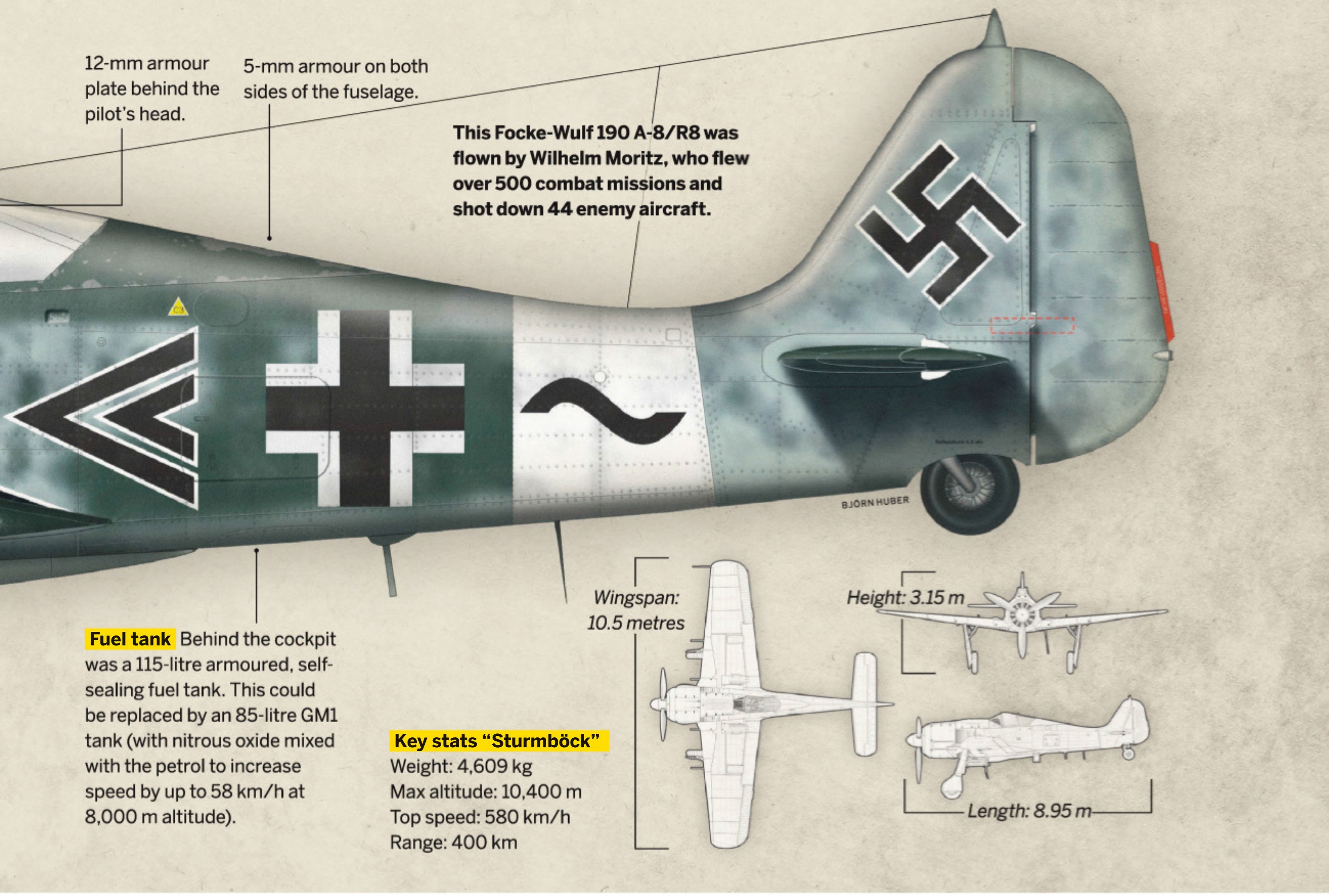
Galland gave Dahl a pat on the back and congratulated him. "You're going to keep doing that, aren't you, Dahl?" he said, laughing.

"Herr General," he replied, "give me ten squadrons of Focke-Wulf 190 Sturmböcke without delay and the civilians in the cities are saved!"

In the autumn of 1941, after two years of war, the Luftwaffe's standard single-engine Messerschmitt Bf 109 fighter aircraft was supplemented by the new Focke-Wulf 190 A. The main difference between the two was that the latter's radial engine was

HISTORIC ARCHIVE

Kurt Tank (1898-1983) was also a talented pilot.



12-mm armour plate behind the pilot's head.

5-mm armour on both sides of the fuselage.

This Focke-Wulf 190 A-8/R8 was flown by Wilhelm Moritz, who flew over 500 combat missions and shot down 44 enemy aircraft.

Fuel tank Behind the cockpit was a 115-litre armoured, self-sealing fuel tank. This could be replaced by an 85-litre GM1 tank (with nitrous oxide mixed with the petrol to increase speed by up to 58 km/h at 8,000 m altitude).

Key stats "Sturmböck"
Weight: 4,609 kg
Max altitude: 10,400 m
Top speed: 580 km/h
Range: 400 km

air-cooled rather than liquid-cooled, inspired in part by the Soviets' more resilient I-16 *Rata* (Rat) fighters. Kurt Tank, the talented engineer at aircraft manufacturer Focke-Wulf, explained:

"We chose an air-cooled radial engine for the new fighter for two reasons. Firstly, because such engines were far more rugged and could survive more punishment than the liquid-cooled types, and secondly because the BMW Company was bench-running prototypes of a new engine, the 1,550-hp BMW 139, which developed somewhat more power than any liquid-cooled engine we had been offered."

On top of this, the Fw 190 was generally a more modern design than the Messerschmitt Bf 109. For example, it was started electrically, and wing flaps and trim tabs were operated electrically (Bf 109s required a crank). In addition, visibility from the cockpit was much better, and a more spacious cockpit gave the pilot more leverage on the control stick.

It was also more robust in several ways. The Bf 109's wings were attached to the fuselage with inch-thick rivets that could come loose under heavy stress, such as when diving. The Fw 190's fuselage, on the other hand, was sunk into the wing to form a whole. Veterans interviewed by this writer said that, "With the Fw 190 you could dive even if the speedometer needle hit the bottom (950 km/h!). If this had been attempted with a Bf 109, the wings would have been torn off."

THE PRINCIPAL IDEA behind the Fw 190's design was that it was better to replace broken parts than to repair them. Therefore, the aircraft was designed so that all parts could be swapped out relatively quickly.

The Fw 190 also had a stronger armament: four autocannons and two machine guns were standard, while all Bf 109 models after 1940 had one autocannon and two machine guns as standard (with two autocannons that could also be attached under the wings).

In combat against other fighters, the Fw 190's best feature was its roll rate, which was superior ►

to all other British and US fighters. This enabled it to change its flight direction faster than its opponents.

THE FIRST FOCKE-WULF 190 A began flying combat missions over the English Channel with the JG 26 fighter wing in August 1941, a year after the Battle of Britain. By now the Royal Air Force had switched to fighting air offensives over France. After most of the Luftwaffe had been transferred to the Eastern Front in June 1941, the remaining German pilots were hard pressed by the numerically superior RAF.

The Fw 190 A quickly proved to be superior to the Spitfire Mark Vb, the latest iteration of the legendary fighter. The Focke-Wulf was 30-50 km/h faster at all altitudes, could climb and dive faster and, above all, enjoyed better manoeuvrability. It was only in a protracted dogfight that the Spitfire proved superior, so the Germans had to avoid prolonged clashes.

On 14th August 1941, the Fw 190 shot down its first aircraft: a Spitfire piloted by Polish volunteer Jerzy Zaremba, commander of 306 'Torun' Squadron, RAF. His killer was German ace Walter Schneider.

The initial reports of the battles with the Focke-Wulf Fw 190 revealed that the British believed that the Germans had used captured French Hawk-75 fighters, which also sported stellar engines. But they soon learned that this was a completely new, and significantly better, aircraft.

JG 26'S II.GRUPPE was the first equipped with the Fw 190, and achieved amazing results. Between September and December 1941, the squadron's Fw 190 pilots shot down 36 British aircraft for the loss of two just planes, a ratio of 18:1. In doing so, they may have been the primary reason why at the end of 1941 the British decided to abandon their air offensive over German-occupied France – the 'reverse Battle of Britain'. The Fw 190's performance differed from that of the Bf 109-equipped units: for example, during the same period, JG 26's I.Gruppe achieved 47 kills against five losses, a ratio only half as good as that of the Fw 190s.

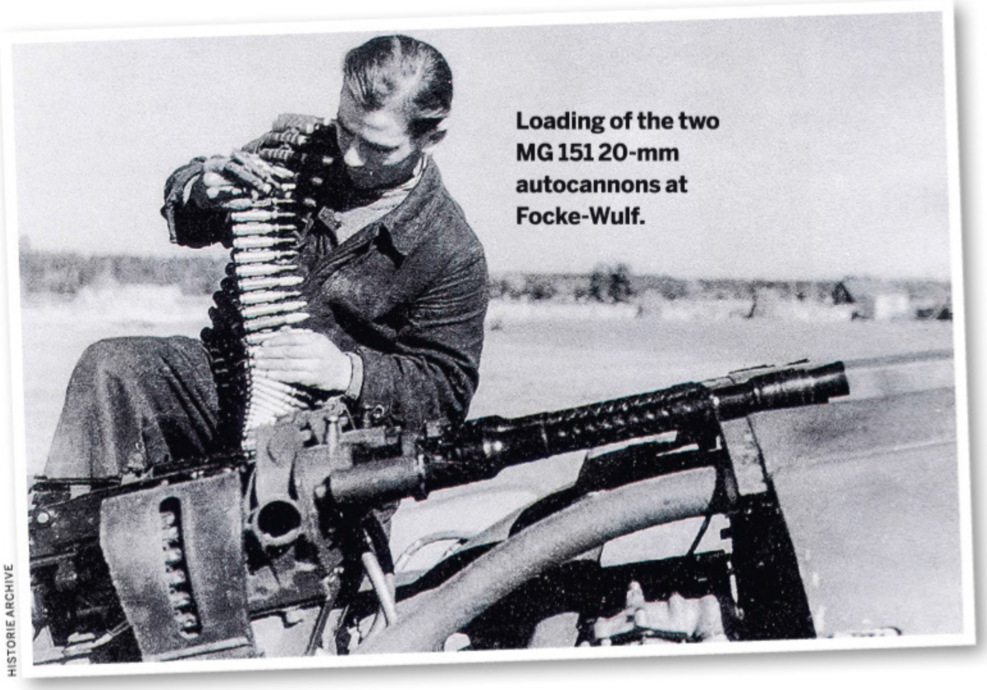
> "IN FACT, THE FW 190 WAS RUSHED INTO SERVICE BEFORE IT WAS READY"

However, although the Focke-Wulf was produced in large numbers, it remained second to the Bf 109 among German fighters during World War II. Only two fighter wings were equipped with Fw 190s on the Eastern Front – JG 51 and JG 54 – and these had large numbers of Bf 109s in service at the same time. Of the 103 German fighter pilots who each scored 100 or more victories during World War II, only 12 pilots achieved this number with the Fw 190. In contrast, the Focke-Wulf 190, thanks to its superior armament, was better at fighting bombers and the heavily armoured Soviet Ilyushin Il-2 Shturmovik attack aircraft.

IN FACT, THE Fw 190 was rushed into service before it was ready. This led to many teething problems – for example, the cockpit hood didn't close properly, allowing exhaust gases from the engine to leak in. Engine overheating and oil leaks were other problems, with Focke-Wulf and engine manufacturer BMW blaming each other. To make matters worse, different factories produced wings of different thicknesses, which created problems when changing flaps.

At the end of 1941, model A-3 arrived with the more powerful and generally improved BMW 801 type D-2 engine. About 30 percent more faults were corrected with the following Fw 190 A-4, which arrived in the summer of 1942. But all issues were not fully resolved until the A-5 model arrived in early 1943. Only then had the Fw 190 matured. With this variant, the fuselage had been extended by 16 centimetres behind the engine compartment to improve engine cooling.

It was also at this time that the Fw 190 began to appear on the Eastern Front. The first unit to be equipped with Kurt



Loading of the two MG 151 20-mm autocannons at Focke-Wulf.

HISTORIE ARCHIVE

A German Focke-Wulf chases a British Spitfire on the English coast, summer 1942.

ULLSTEIN/GETTY

Tank's new Focke-Wulf on the Eastern Front was the I.Gruppe of JG 51, in September 1942. Between September and December 1942, this squadron achieved results almost as impressive as the first Fw 190 unit on the Western Front, with an average of 12 kills for every loss.

A GERMAN FIGHTER pilot who had not previously achieved much success with the Bf 109, but was much more comfortable with the Fw 190, was Günther Schack, who joined the JG 51 fighter wing in March 1941. Until October 1942, he flew 300 combat missions with various Bf 109s. He survived this period but shot down only 18 Soviet aircraft.

But when Schack received an Fw 190 at the end of 1942, his air combat record really took off. On 17th December 1942, he and his squadron attacked a formation of Soviet Petlyakov Pe-2 bombers with his Focke-Wulf.

The author of this article identified the Soviet unit in question, the 81st Guards Bomber Air Regiment (81 GBAP) and met and interviewed one of the bomber pilots who was attacked by Schack that day, Nikolay Gapeyonok. It turned out that he had a very clear memory of this horrific experience, which took place over the skies of a Russian city:

"We flew two squadrons of 18 Pe-2s with a mission to bomb Velikiye Luki," Gapeyonok recalled of the fateful day. "As we approached the front, we were suddenly attacked by two Fw 190s from behind. One pilot attacked, the other stayed behind. The German was very skilful. He was always in a blind spot for our gunners. One by one he shot down five of our Pe-2s in quick succession. I was shot down

HISTORIE ARCHIVE

The Fw 190 initially had problems with the cockpit hood not closing tightly.

myself. I crash-landed my Pe-2 and was captured – by my own soldiers! It was the worst air battle for me during the whole war."

GÜNTHER SCHACK BECAME one of the most successful pilots in JG 51, and it was with the Fw 190 that he achieved his greatest success. In August 1943 alone he shot down 40 Soviet aircraft in his Fw 190. On 3rd September 1943, he secured his 100th air victory and was awarded the Knight's Cross with Oak Leaves.

However, in May 1944, the squadron replaced its Fw 190s with Bf 109s due to a shortage of the Focke-Wulf planes, which were now needed to defend Germany as well as serve as attack aircraft. By this point, Schack had 134 air victories, but on returning to the Bf 109, he was only able to add another 32 kills to his record in the last year of the war while he was himself shot down at least four times. On 12th April 1945, he was shot down for the last time and was badly burned.

The second fighter wing on the Eastern Front to be equipped with the Fw 190 was JG 54 "Grünherz", which started rolling out in January 1943. The most famous pilot in JG 54 was a young Austrian named Walter 'Nowi' Nowotny.

NOWOTNY WAS UNDOUBTEDLY one of the most outstanding fighter pilots of World War II. He was honoured by one of his foes, the French flying ace Pierre Clostermann, in his post-war memoirs. Nowotny flew 441 combat missions between 1941 and 1944, and secured 258 confirmed air victories. On 14th October 1943, he became the first fighter pilot ever to reach 250 kills. After 255 kills, he was removed from front-line service so that the German propaganda machine would not lose such a 'diamond'.

"THE GERMANS BEGAN TO ATTACH BOMBS TO FIGHTERS"

But the changing fortunes of the war left the Germans with no choice. In the autumn of 1944, Nowotny was reinstated to front-line service as head of the experimental fighter unit Kommando Nowotny, with the Me 262 jet fighter. This proved to be an insurmountable task for the 23-year-old ace. On 8th November 1944, he was shot down – possibly by anti-aircraft fire – and killed.

However, the most successful fighter pilot of the Fw 190 was not Nowotny, but Otto Kittel, also from JG 54. Otto Kittel was described by JG 54 veterans as one of the most popular pilots in the fighter wing. While Nowotny was a committed Nazi, Kittel – nicknamed 'Bruni' – was more critical of the regime.

Kittel was a young pilot made of tough stuff. He was on continuous front-line duty from 1941 to 1945, making 583 combat flights. He recorded 267 air victories and was shot down several times himself. His combat skills as a fighter pilot were constantly improving, and in fact he was most successful in 1944, when the Soviets had developed superior fighter planes to the Germans – the La-5FN, La-7 and Jak-3. By early 1944, Kittel had 127 air victories to his credit. By the end of the year, he had increased this number to 264. His squadron commander, Hans Philipp, said:

"Kittel has what it takes to be a successful fighter pilot: he is a very skilful aviator and a good shot. But

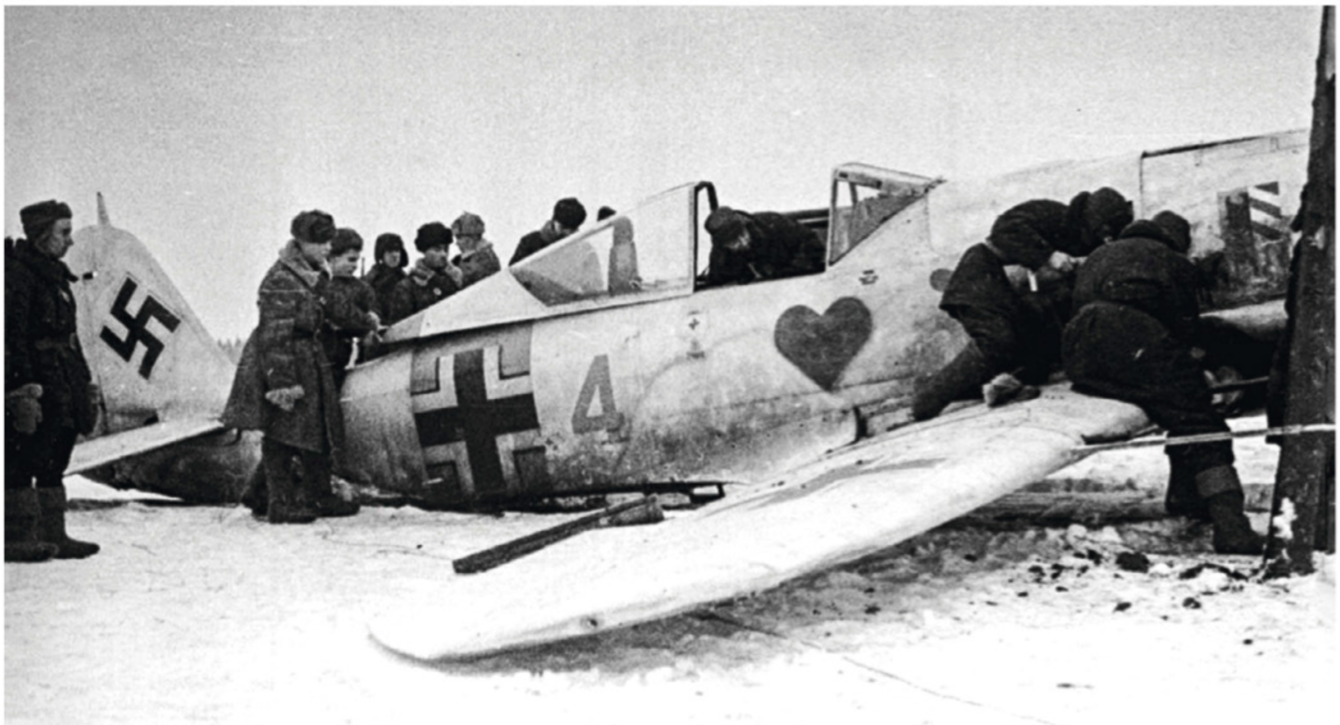
Otto Kittel is the fourth most successful ace in the history of aviation.

INTERFOTO/IMAGESELECT

The most successful Fw 190 pilots

★ Some variants of the Focke-Wulf 190 proved the ultimate aircraft for attacking four-engine bombers such as the US Flying Fortresses. Other versions were successfully deployed on the Eastern Front as attack aircraft, rivalling the well-armoured Ilyushin Il-2 Shturmovik.

German pilots with the most kills against:	Bombers	Bombers (in Fw 190s)	Total number of victories
Georg-Peter Eder	36	10	78
Anton Hackl	34	34	192
Konrad Bauer	32	29	57



HISTORIE ARCHIVE

most importantly: he never lets himself become careless in the pursuit of success."

Nevertheless, Kittel was shot down several times – by now the Soviets had many extremely skilful pilots of their own.

On 15th March 1943, Kittel was forced to crash-land his damaged Focke-Wulf 60 kilometres behind Soviet lines. However, the resourceful pilot managed to avoid capture. After a three-day march, he crossed the frozen Lake Ilmen and reached the German lines, completely exhausted.

ON 27TH OCTOBER 1944, Otto Kittel shot down an Il-2 Shturmovik for his 250th air victory. Four months later, on 16th February 1945, air forces on both sides fought as part of a Soviet offensive against the encircled German Army Group in the Courland Pocket in western Latvia.

The Soviet 502 ShAP (Ground Attack Regiment) was ordered into the air with three groups of four Il-2s each sent against targets in the Džūkste area, mainly artillery positions. On the German side, four Fw 190s from JG 54 took to the air. They were led by Kittel, and it was his 583rd combat mission.

502 ShAP's battle report read: "At 14.13-14.23 in the target area at a height of 150 metres, the leading group was attacked from above and behind by enemy aircraft. From a distance of 50 metres, ►

Red Army men examine a downed Fw 190 A-4, near Leningrad. The heart under the cockpit is the fighter squadron's JG 54 "Grünherz" emblem.

German pilots with the most kills against:	Il-2 Shturmovik	Total number of victories	Primary aircraft flown
Otto Kittel	94	267	Fw 190
Joachim Brendel	88	189	Fw 190
Johannes Wiese	70	133	Bf 109
Franz Schall	61	133	Bf 109
Günther Josten	60	178	Fw 190
Erich Rudorffer	58	224	Fw 190
Anton Hafner	55	204	Fw 190
Franz Eisenach	52	129	Fw 190

An Ilyushin Il-2 Shturmovik with burning cockpit in Belarus, 1944.

HISTORIE ARCHIVE

Lieutenant Komendat opened fire on an Fw 190 passing above him. This immediately crashed and landed in a forest one kilometre north of Ferdinamuiza. As a result of German fighter attacks, an attack aircraft was damaged and the gunner Sergeant Barbasyov was seriously injured."

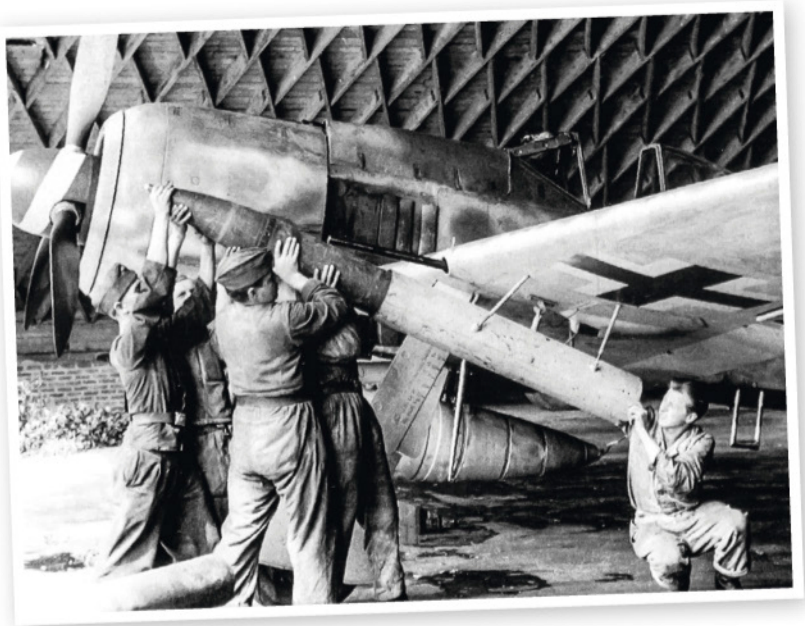
The Fw 190 was Kittel's, and the Luftwaffe's main Focke-Wulf flying ace was killed in the attack, dealing a hammer blow to his fighter wing.

Although the Focke-Wulf was designed as a fighter and has become best known as such, it was in its role as a ground-attack plane that the machine achieved its greatest success, at least in terms of its impact on WWII as a whole. As we shall see, the Fw 190 as an attack aircraft helped prolong the war.

QUITE EARLY ON in the war, the Germans began to attach bombs to some of their fighter planes so that they could act as fighter-bombers – fast aircraft capable of dropping small bombs on ground targets.

A cornerstone of the German Blitzkrieg of 1939-41 was close air support for advancing ground units; aircraft were used as a kind of flying artillery against enemy resistance points. In modern times, this is a task primarily for attack aircraft, but at the outbreak of the war, the Luftwaffe had only one ground-attack unit, and this was equipped with about 40 Henschel 123 biplanes.

The most common aircraft used to provide close air support to ground troops was the Junkers 87 Stuka dive bomber. As early as 1940, however, the fighter squadron began to be equipped with Messerschmitt Bf 109s. In 1942, the Luftwaffe's first ground-attack squadron, Schlachtgeschwader 1 (SchG 1), was established, with the Bf 109 its primary aircraft. However, the Messerschmitt was liquid-cooled, which therefore made it vulnerable to attacks from below due to the two exposed radiators under its wings.



BUNDESARCHIV, BILD 101I-674-7772-13A

The 210-mm Werfer-Granate 21 rocket could be attached to a tube launcher under the wing of the Fw 190, such as this A-8/R6.

“THE FW 190 WAS AIR-COOLED AND SO LESS VULNERABLE”

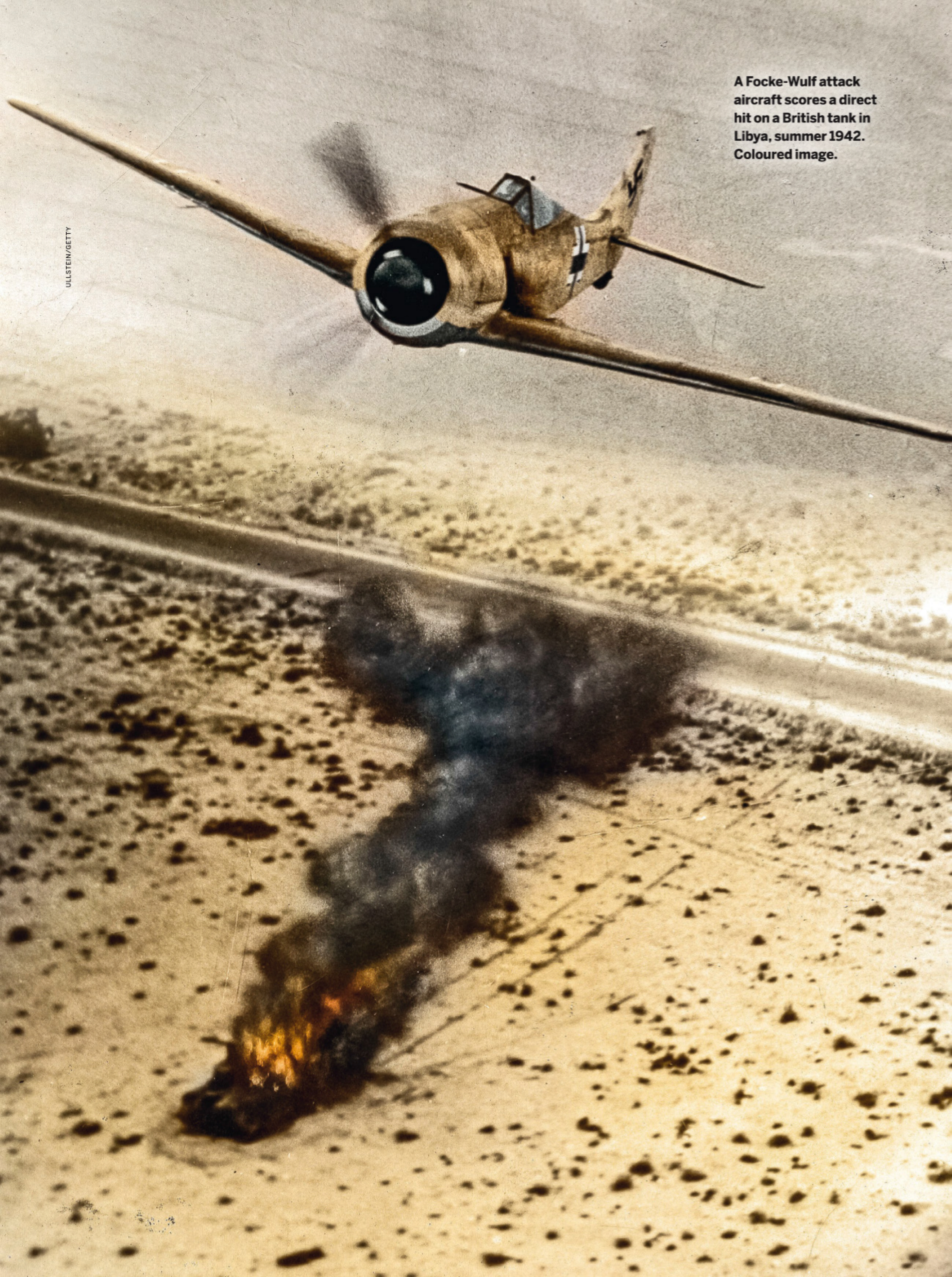
IN CONTRAST, THE Fw 190 was air-cooled and so less vulnerable to ground fire. It made its debut as an attack aircraft on the Eastern Front in January 1943. The plane arrived just as the Luftwaffe became the Germans' only option to halt the Soviet offensive in Ukraine after the fall of Stalingrad. After the destruction of the Hungarian 2nd Army at Voronezh in January 1943, there were hardly any German ground units between the Red Army and the Dnieper River. The Luftwaffe's action was crucial to blocking the Soviet advance.

The attack version of the Focke-Wulf 190 was a development of the A-4/U3 variant, which could carry a 250-kg bomb in a rack under the fuselage for deployment as a fighter-bomber. Eventually the bomb load was increased by replacing the external 20-mm autocannons with bomb racks under the wings. In May 1943, the Fw 190 F-3 entered service. This was a ground-attack variant of the Fw 190 A-5, with the bomb rack standard equipment. This further developed into the Fw 190 G, a pure attack model that arrived in the summer of 1943. The Fw 190 G had both bomb racks and racks for drop tanks (to extend its range) fitted at the factory.

By then, 550 Fw 190 Fs had been produced, and 1,300 Fw 190 Gs were built before it was replaced by the new Fw 190 F-8 in the summer of 1944. This was the perfect attack model. It had two 13-mm machine guns on top of the engine in place of the original 7.92-mm guns, an improved bomb dropping mechanism, and a radio powerful enough to allow its pilot to communicate directly with the ground forces he was supporting. With over 4,000 Fw 190 F-8s produced, it became the Luftwaffe's most common attack aircraft during World War II.

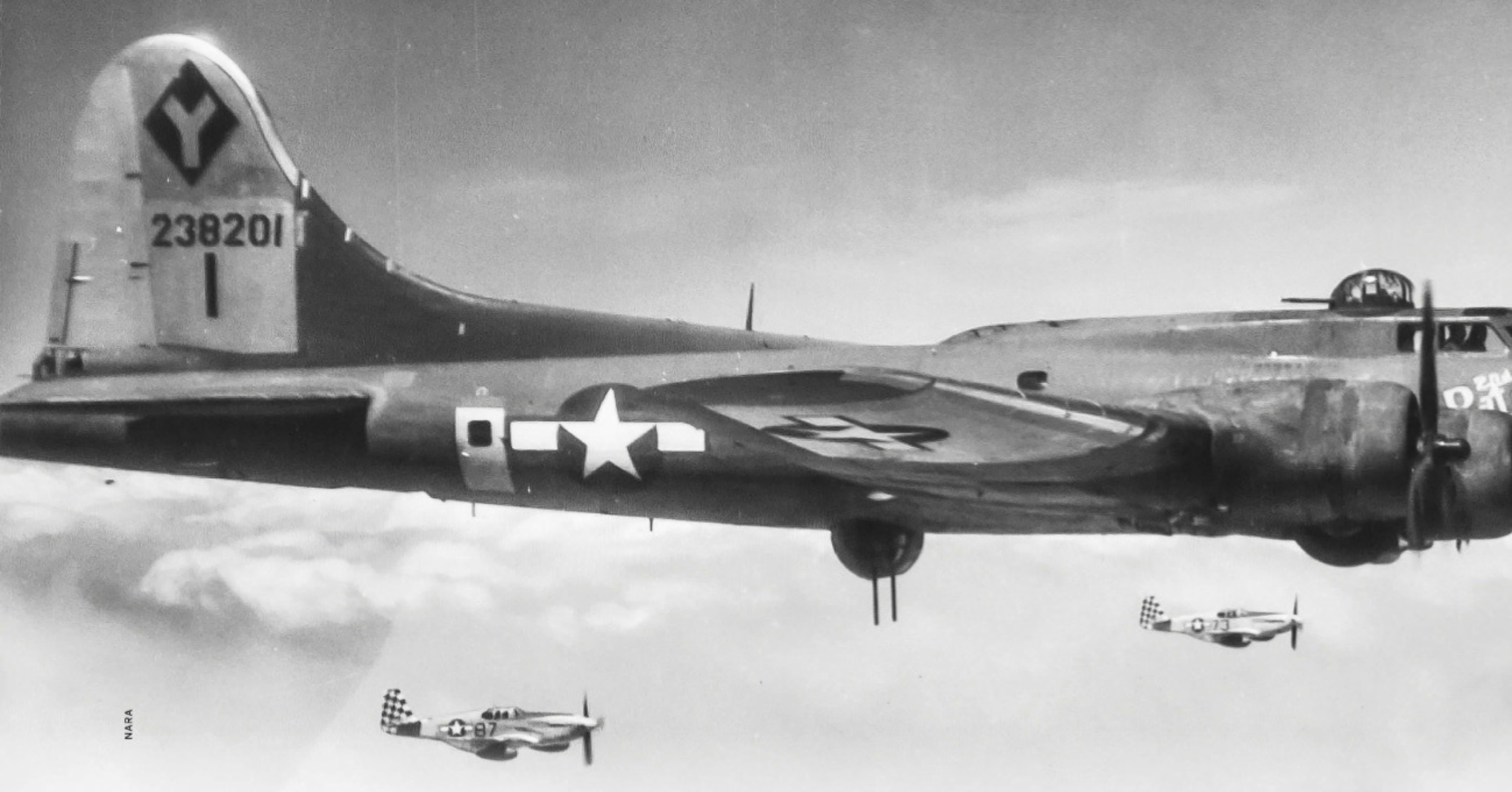
In July 1943, Fw 190 attack aircraft again played an important role, this time in the German victory in the tank battle at Prokhorovka. Even in the final battle for North Africa between November 1942 and May 1943, the Focke-Wulf 190 was one of the Germans' most important attack aircraft. For example, Rommel's counter-attack at the Kasserine Pass in Tunisia in February 1943 was supported by Fw 190 attack aircraft.

DURING THE BATTLES in Sicily and Italy in 1943-44, Focke-Wulf attack aircraft were perhaps the Luftwaffe's most important asset. During this period, the number of Fw 190-equipped attack squadrons in



A Focke-Wulf attack aircraft scores a direct hit on a British tank in Libya, summer 1942. Coloured image.

ULLSTEIN/GETTY



When the P-51 Mustang was deployed in the air battles over Europe, the Focke-Wulf aircraft were outnumbered. Here, fast US fighters escort a B-17 Flying Fortress in 1944.

the Mediterranean increased from one to six, with Allied ships supplying the landing forces becoming important targets for Focke-Wulf attack aircraft. Between mid-May 1943 and early September 1943, the Fw 190 units reported bomb hits on 160 Allied ships. Although their own losses amounted to 113 aircraft and 75 pilots, equivalent to about 50 percent of the original force, the damage they inflicted on the enemy was incomparably greater.

Due to the increasing losses in the dive bomber units, which were equipped with the slow Junkers 87 Stuka, from October 1943 these units were gradually equipped with the Focke-Wulf 190, which was both faster and better armed. A major advantage of the Fw 190 as an attack aircraft was that once it dropped its bombs, it could engage enemy fighters on fairly even terms. One such Fw 190 attack pilot, August Lambert, shot down 116 Soviet aircraft in air combat.

MOST FW 190 strike planes were deployed on the Eastern Front. There they mainly attacked bridges, airfields, artillery positions, marching troops and lorry columns. This had a significant slowing effect on the Red Army's ability to advance. The growing importance of attack aircraft is demonstrated by the fact that they soon made up a third of all German aircraft on the Eastern Front.

Meanwhile, the German fighter pilots in the west struggled against growing Allied air superiority. One of the most famous German fighter pilots on this front was Josef 'Pips' Priller of fighter wing JG 26. It was he who carried out the famous paired flight with his wingman over the Normandy landing beaches on 6th June 1944 – immortalised in Cornelius Ryan's book and film *The Longest Day*. Priller did this in his Focke-Wulf 190, which he had decorated with a heart-shaped ace and the name of his sweetheart, Jutta.

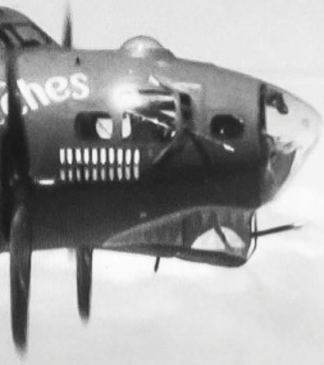
Priller was credited with shooting down 101 British and US aircraft during World War II, the last 40 of which were with an Fw 190. Sixty-eight of his air victories were against British Spitfires.

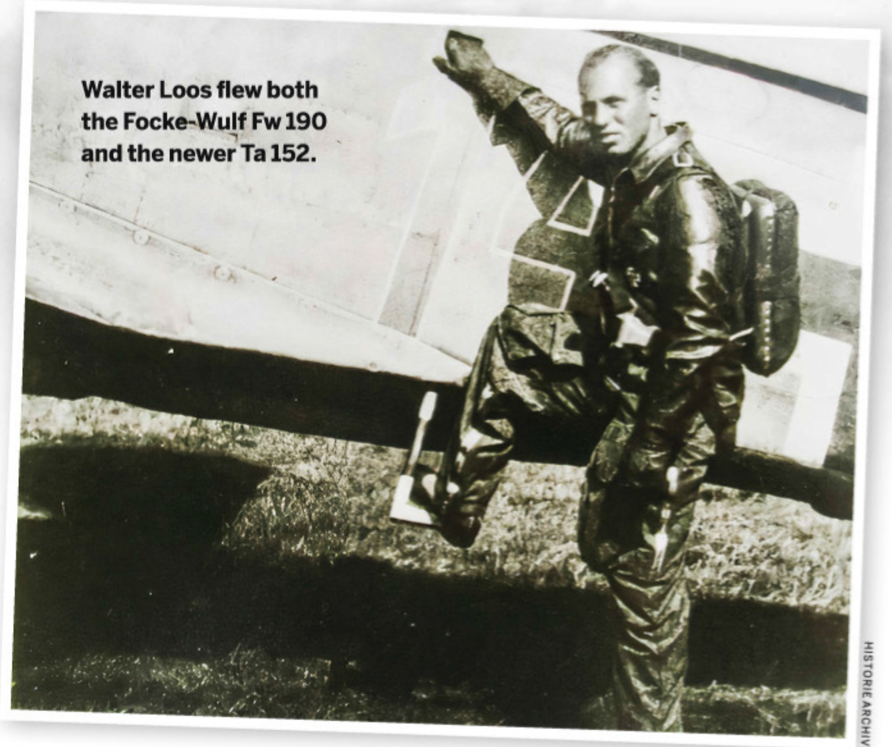
BUT WHEN THE Germans came up against large US four-engine bombers like the B-24 Liberator and B-17 Flying Fortress, which came in tight formations surrounded by a wall of bullets from hundreds of machine guns, no amount of aerial skill helped. German fighter losses skyrocketed and real successes against the bombers did not materialise.

In autumn 1943, General Galland tackled the problem by deploying twin-engine heavy fighters of the Bf 110 and Me 410 types, which launched rocket salvos from a distance or fired large guns into the bomber formations to break them up. The single-engine fighters were then able to pick off the bombers one by one. This forced the Americans to suspend their bombing offensive against targets deep inside Germany.

But during the winter of 1943-44, the US built up its fleet of four-engine bombers in Europe from 900 in September 1943 to almost 3,000 in February 1944. At the same time, a new long-range escort fighter, the North American P-51 Mustang, entered service. This was 100 km/h faster than the Fw 190 A-8, the latest model, and so the American bombing offensive could resume. By now the Bf 110 was required mainly as a night fighter, and the Me 410 had only been produced in relatively small numbers. A total of 53 Me 410 A-1/U4s – a model equipped with a 50-mm gun – entered service. Although they shot down 129 B-17s and four

“THE AMERICANS QUICKLY LEARNED WHAT IT MEANT TO FACE SUCH A WEDGE FORMATION WITH ‘BATTERING RAMS’”





Walter Loos flew both the Focke-Wulf Fw 190 and the newer Ta 152.

HISTORIEARCHIVE

B-24s for the loss of nine aircraft, these 53 machines were far too few to make a noticeable difference.

It was in this situation that the idea came to mount so much armour on the front of the Fw 190 A-8 that it became almost invulnerable to the bombers’ machine guns, plus equip it with 30-mm autocannons capable of cutting through the bombers. Escorted by Bf 109s, which were slightly faster than the standard Fw 190, they could slowly approach US bomber formations from behind and shoot them to pieces. Thus, the Sturmböcke that we encountered at the beginning of this article were born alongside other Sturmgruppen.

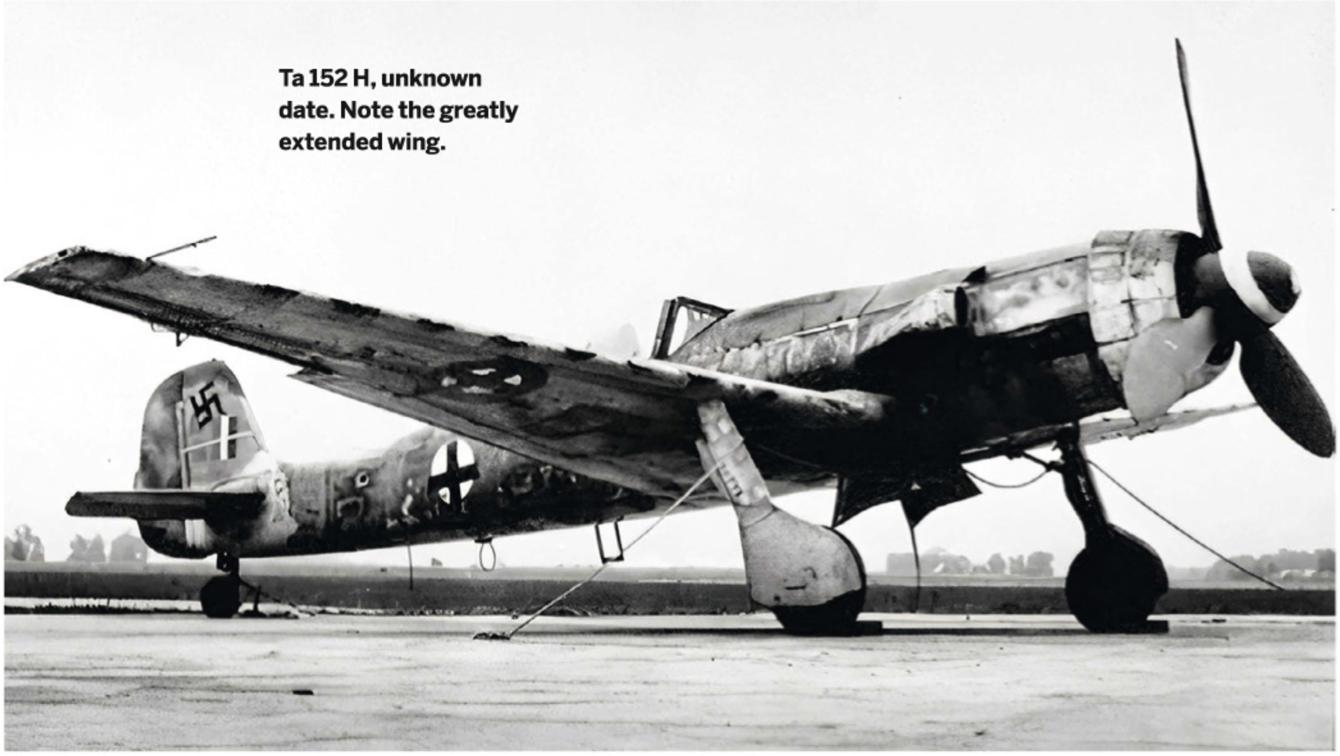
THE FIGHTER PILOTS who were judged to be the toughest, with the strongest nerves and greatest determination, were hand-picked for the Sturmgruppen. It was not necessarily the veterans who were most skilled at flying – they were used to pure fighter combat and frequently couldn’t cope with the terror of flying straight at a large, fire-breathing formation of four-engined bombers. Instead, it was young and fast-tracked pilots, nurtured to fanaticism in the Hitler Youth, who managed the special task of the storm attack. No major flying skills were required – it was enough to follow the leader of the unit and drop back to a few dozen metres behind a Flying Fortress.

“Any donkey can shoot down a Flying Fortress,” claimed Ernst Schröder, a veteran storm trooper, when this article’s writer met him. The morale of these storm troopers was sky-high. Another of them, Richard Franz, was 21 when he signed up for Sturmstaffel 1. He recalled:

“With our 30-mm MK 108 guns, we could easily clip the wing of a B-17 Flying Fortress. It was even easier to shoot down a B-24 Liberator, as it had a weaker fuselage.”

The Americans quickly learned what it meant to face such a wedge formation with ‘battering rams’. There was not much fire-breathing from the bomber formations. Ernst Schröder recalled: “During all the attacks in which I participated, we didn’t encounter counterfire from the bombers on a single occasion. The twin tail guns were pointing upwards on all bombers along the whole line – the gunners had released them, so that the heavy breeches with the ammunition belts went to the floor.”

According to Schröder, the Americans were so terrified at the sight of the storm wedge that they had to rush to the aircraft toilet – if they could get there before an accident occurred. Despite these unverified claims, the storm pilots had good reason for their self-belief. After all, every time they ►



HISTORIE ARCHIVE

Ta 152 H, unknown date. Note the greatly extended wing.

reached a US bomber unit, a terrible massacre of B-17s and B-24s followed.

LET'S LOOK AT some of the storm troopers to get an idea of the character of these Fw 190 pilots.

Werner Gerth, for example, was 20 years old when he volunteered for Sturmstaffel 1 under Major Hans-Günter von Kornatzki. He was credited with 26 kills between February and November 1944, 22 of which were four-engine bombers. He himself was shot down no fewer than 12 times during those nine months. He was able to deploy his parachute on 11 occasions, each time throwing himself back into the fray without hesitation. On 2nd November 1944, his luck ran out – his parachute failed to open.

Walter Loos, aged 21, joined the Luftwaffe as a newly qualified pilot in January 1944 and flew in Major Dahl's Sturmgruppe. He completed 66 combat missions by the end of the war, was listed for 38 confirmed victories – 22 of which were four-engine bombers – and claimed a further eight for which he had no witnesses. He himself was shot down nine times but survived them all.

Walther Dahl was a rare veteran who had been around since 1941 and still managed to withstand the pressure of the storm assaults. He achieved a total of 128 kills and also survived the war.

But with the storm troopers, as with so much else for the Germans during the war, they were too late. From May 1944, the US and British bombed German synthetic fuel plants, and after the Red Army captured the Romanian oil fields in August 1944, Luftwaffe aircraft were largely left on the ground with empty tanks.

THE STURMBÖCKE'S SWANSONG came on 14th January 1945, when 189 were deployed against 800 US bombers and almost as many Mustang fighters over Germany. Most German fighters were on the front line in the Ardennes, so there was little in the way of an escort. The result was a bloodbath as hundreds of Mustangs pounced on the Sturmböcke before they could even reach the bombers. By the time the battle was over, ten US fighters and eight bombers had been shot down for the loss of 89 storm troopers. The unit would never recover.

In terms of technology, however, Kurt Tank, the man who had created the Focke-Wulf 190, always managed to keep up with the Allies. In the summer of 1944, he was able to put a new Fw 190 model, the D-9 ("Dora-9"), into production. This was basically an ordinary A-8 fitted with a 12-cylinder Jumo 213A rotary engine. As this was considerably longer than the standard BMW 801 radial engine, the engine bay had to be extended by 1.25 metres – giving rise to the aircraft's nickname, *Langnasen-Dora* (Long-Nose Dora).

The more powerful Jumo 213 delivered an average top speed 70 km/h higher than the A-8, enabling it to compete with the Mustangs with considerably more success, especially at lower altitudes, where it was 15 km/h faster than the US fighter.

Although many German fighter units on the Western Front were equipped with the Fw 190 D-9 from autumn 1944 onwards, and the pilots were very pleased with their new plane, it was only a temporary solution that was rushed into service. Kurt Tank, who knew what was needed, was never really satisfied with the Dora-9. It was nothing more than a stage in the development of what would become the fastest piston engine fighter of WWII.

TANK WAS TASKED with developing a new high-performance aircraft with high-altitude (extra-wide span) and low-altitude variants. The Dora-9 was the low-altitude model, but Tank had intended to evolve this into a completely new aircraft, named Ta 153 after its designer. This was to be powered by the Daimler-Benz DB 603 radial engine, which was expected to deliver speeds unrivalled among low-altitude piston-engine aircraft.

But since the Ta 153 was no longer an Fw 190 variant, but a completely new aircraft requiring a newly manufactured fuselage, the Ministry of Aviation decided not to place an order for it, but instead asked Tank to modify it so that the aircraft could use fuselages from the Fw 190 A-8. The result was the final Fw 190 variant, designated Ta 152, which was essentially a greatly improved version of the Dora-9. To improve stability, a 60-cm-long piece was mounted on the rear part of the fuselage, and the cockpit was moved slightly backwards. The Ta 152 was intended to replace the D-9 with two models: the Ta 152 C-1 with a DB 603 engine and shorter wingspan for lower altitudes, and the Ta 152 H-1 with a greatly extended wingspan – 14.82 metres instead of 10.50 metres for the Dora-9 – and a Jumo 213 E engine for high altitudes.

Due to the lack of DB 603 engines, the Ta 152 C-1 never made it into production, but the H-1 version made it into combat, albeit in small numbers. With a top speed of 735 km/h, it became the perfect foil to the Mustang.

> **“TANK WAS TASKED WITH DEVELOPING A NEW HIGH-PERFORMANCE AIRCRAFT”**

A weakness of the Ta 152 H-1 was that the large span reduced its roll rate. However, this was partially compensated for by the large wing area, which gave a very tight turning radius. The unique feature of the machine was that it was incredibly agile even at high speeds. In addition, the Ta 152 H had a pressurised cabin, which the Mustang lacked. Willi Reschke, one of the few who flew the Ta 152 in combat, told the author of this article: “The Ta 152 was my life insurance at the end of the war!”

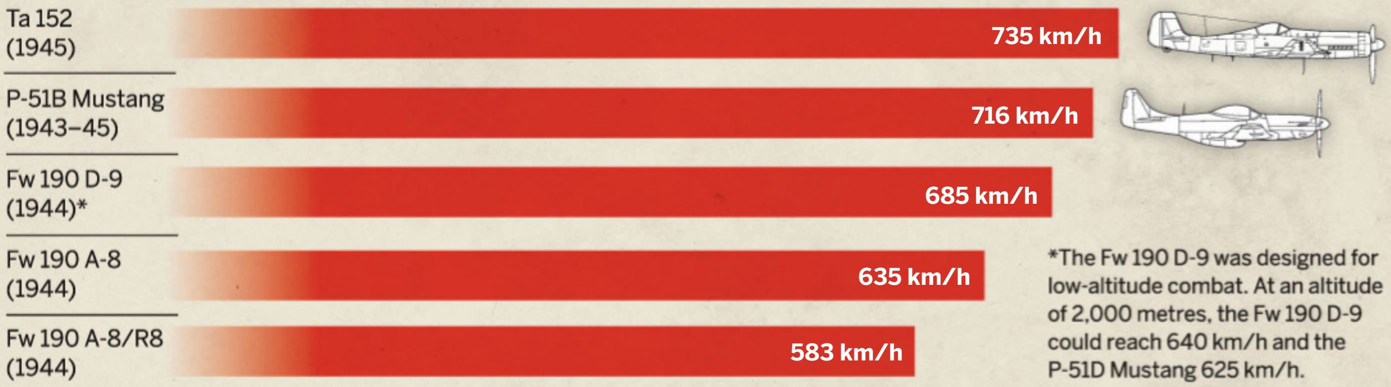
UP TO 20 pre-production Ta 152 H-0s were delivered to the test unit EKdo (*Erprobungskommando*, or Testing-Command) Ta 152 in November 1944. In January 1945, some of these, as well as several H-1s, were delivered to the staff division of fighter squadron JG 301, where Reschke served. These were the only Ta 152s to be deployed in combat. Since the vastly superior Me 262 jet fighter had by then been deployed to units in greater numbers, Ta 152 production was rationalised.

Due to the fuel shortage, few missions were flown with the Ta 152s. When they were first deployed on 2nd March 1945, they were attacked by their own Me 109s – who mistook them for Mustangs. However, thanks to their superior speed and ►

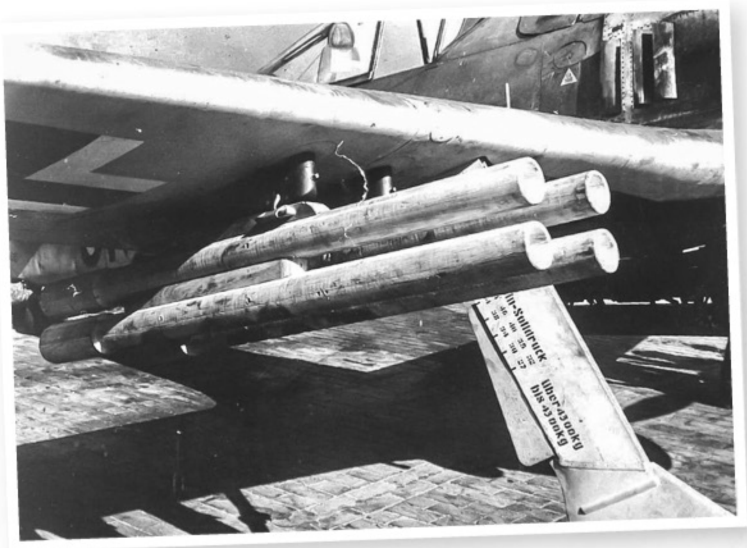
Focke-Wulf or Mustang – which was faster?

★ Although the Fw 190’s stellar engine was quick, it was outperformed by the P-51 Mustang when it was deployed in the air war over Europe. Only the Ta 152 variant was able to outpace the Americans’ speedy escort fighter.

Top speed at 7,000 metres altitude



*The Fw 190 D-9 was designed for low-altitude combat. At an altitude of 2,000 metres, the Fw 190 D-9 could reach 640 km/h and the P-51D Mustang 625 km/h.



HISTORIE ARCHIVE

The Fw 190 F was equipped with the Panzerschreck anti-tank weapon.

manoeuvrability, the Ta 152s were able to escape with no losses.

ON 14TH APRIL 1945, Reschke and two fellow pilots attacked three British Tempest fighters with their Ta 152s. Reschke said that he could have shot down a Tempest in a dive attack, but in his youthful zeal, he wanted to test the Ta 152's manoeuvrability, so he got behind one of the British.

This machine was piloted by Ensign Owen J Mitchell, an experienced pilot with over 700 flying hours: "The Tempest … was [at] approximately 10 o'clock before me," Rischke recalled. "The dogfight began between 50 and 100 metres above ground level … The whole fight was executed in a left-hand turn, the low altitude of which would not allow for any mistakes.

"[A]fter a few circles I had reached the most favourable shooting position … I pressed my machine-gun buttons … but my machine-guns experienced feeding problems. I therefore tried to shoot it down with my cannon and forced her into a tight left-hand turn from where she tipped out over her right wing and crashed into a forest."

Shortly before this incident, the Focke-Wulf had carried out probably its most significant operation of the entire war. This took place on the River Oder in February 1945.

THE RED ARMY had launched its major offensive in Poland, intended as the final advance on Berlin, on 12th January 1945. All German resistance was completely crushed, and the Red Army advanced victoriously across Poland and into Germany.

In a panic, Hitler transferred both the 6th SS Panzer Army and virtually all available aircraft from the Ardennes to the Eastern Front. This concentrated almost the entire Luftwaffe against

the Red Army. While Soviet planes had to operate from makeshift airfields that became unusable when a sudden snow melt transformed them into swampy terrain, the Luftwaffe flew from modern civilian German airfields.

Focke-Wulf 190s from five ground-attack squadrons played the main role in strikes on Soviet ground troops. From 31st January to 2nd February 1945, 3,300 individual combat flights were carried out against the Red Army. Luftwaffe activity increased so that 5,008 sorties were launched against the Soviet 5th Shock Army – which was heading straight for Berlin – on 2nd-3rd February.

From October 1944, many Fw 190 Fs were equipped with Panzerschreck rocket launchers to combat enemy tanks – up to six mounted under each wing. These proved terribly effective. The Soviet troop and vehicle columns, travelling along muddy roads with snowbanks up to two metres high on either side, had difficulty escaping these air raids. There the cluster bombs of the Fw 190 had a particularly devastating effect. The term *Schlacht-Flugzeug* (ground-attack aircraft) now took on a new meaning, based on the alternative definition of the German word *schlachts* – slaughter.

Erhard Jähnert, who completed 700 combat flights as a Stuka and attack pilot from 1939 to 1945, told this writer: “We usually attacked from the side in a 30-degree dive and fired our rockets at a distance of 50-60 metres. Firing six rockets at a time, we hit everything within an area of 15 by 30 metres. A hit was almost guaranteed. We always made two attacks, with six rockets each time. When we hit a tank, it was always on fire. Each pilot could count on at least one tank destroyed per flight.”

“THE CLUSTER BOMBS OF THE FW 190 HAD A PARTICULARLY DEVASTATING EFFECT”

Thanks to these devastating air strikes – in which Focke-Wulf 190 attack aircraft played the main role – the Soviets were forced to halt their seemingly unstoppable offensive right in front of Berlin. This gave the Germans time to reorganise their ground units and bring in more reinforcements. The war, which could have ended in February 1945, therefore lasted another three months. This was mainly due to the Fw 190 and its pilots.

Christer Bergström is a military history writer and author of several published books.

Focke-Wulfe from JG 54 under Otto Kittel during an air raid, spring 1944.

HISTORIE ARCHIVE

Legendary test pilot Hanna Reitsch at the controls – date unknown.

SCHERL/SUEDDEUTSCHE ZEITUNG PHOTO/RITZAU SCANPIX

HANNA REITSCH

Lived: 1912–79.
Military career: Test pilot for Nazi Germany's Luftwaffe. Twice awarded the Iron Cross.
Civilian career: Pursued gliding and broke numerous records. Ran a gliding school in Ghana 1962-66.

Hanna Reitsch test-flew many of the Luftwaffe's aircraft, including the rocket-powered Messerschmitt Me 163 Komet fighter, which climbed as high as 10,000 metres before attacking enemy bombers.

ROYAL AIR FORCE

She would die for the Führer

Thanks to her courage and skill, Hanna Reitsch became Nazi Germany's most famous test pilot. At the end of the war, she even prepared for a suicide bombing attack on London.

Text: **ANNA LARSDOTTER**

FAMOUS PILOT

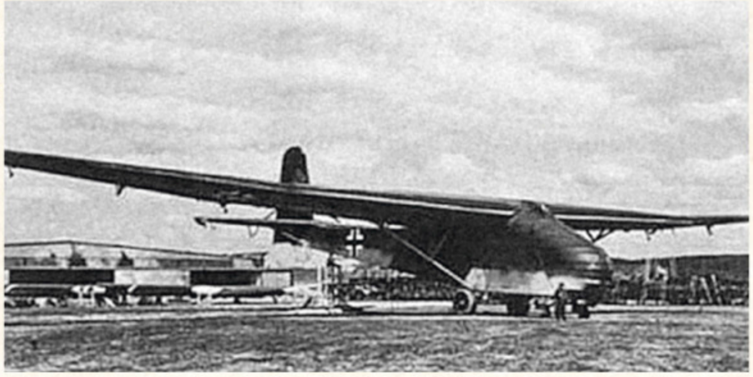
German test pilot Hanna Reitsch was known for three things: her exceptional courage, her extreme patriotism, and for always laughing. Reitsch seems to have always had a smile on her face, even when those around her saw no reason to look happy. During World War II, she was one of the few Germans who remained steadfast in her belief in the Fatherland until the very end.

Reitsch test-flew many of the spectacular aircraft developed by the Luftwaffe during the war. Her daring seems almost unbelievable in retrospect. Why, for example, did she consent to test-fly the Me 321 Gigant, a 'monster' cargo glider so heavy that it took three tug planes to get it into the air? After testing, she tried in vain to persuade the designer, Willy Messerschmitt, to halt production. Shortly afterwards, a Gigant crashed after colliding with its tug planes, killing 129 men in the process.

REITSCH WAS BORN in 1912 in Hirschberg, Silesia (now Jelenia Góra in Poland). Her parents were devoted patriots who viewed the Treaty of Versailles as unjust and hoped for German reparations. She inherited an unwavering faith in God from her mother, to the extent that if Hanna Reitsch criticised the Nazi elite for one thing, it was for its ungodliness.

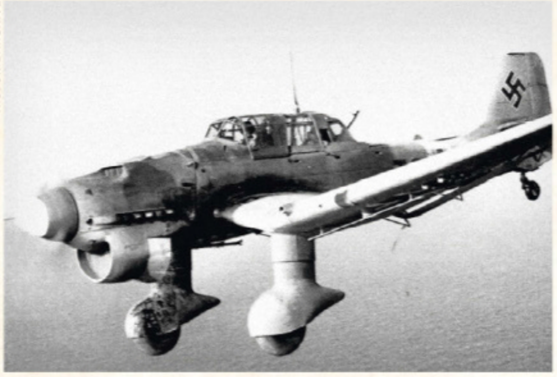
Ever since she was small, Reitsch had harboured a dream of becoming a pilot. As soon as she left school, she started a course in gliding – a popular sport in interwar Germany. Motorised flight was banned until 1926 under the Versailles treaty. Gliding was ▶

"DURING WORLD WAR II, SHE WAS ONE OF THE FEW GERMANS WHO REMAINED STEADFAST IN HER BELIEF IN THE FATHERLAND UNTIL THE VERY END"



HISTORIE ARCHIVE

Messerschmitt Me 321 Gigant. This huge glider was among the aircraft that Hanna Reitsch test-flew. A newer model with engines, the Me 323, was more successful than the engine-less version.

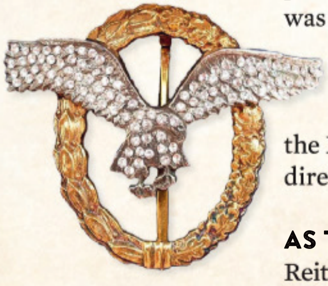


HISTORIE ARCHIVE

Junkers Ju 87 Stuka. Reitsch tested dive brakes on the iconic dive bomber. The brakes are visible underneath, at the leading edge of the wing.

thus seen as an act of patriotic resistance. To some extent, the clubs seem to have served as nurseries for future fighter pilots.

In 1934, Hanna Reitsch learned to fly motorised planes at a school in Stettin (Szczecin in present-day Poland). The training's civilian nature did not preclude officers from being instructors – the idea was not that all students would become airline pilots for Lufthansa. Instead, many went on to serve in the air force that Hermann Göring was secretly building. In 1935, the Luftwaffe was officially established in direct violation of the Treaty of Versailles.



Hanna Reitsch was one of only 34 people to be awarded the Gold Medal for Military Flying with diamonds.

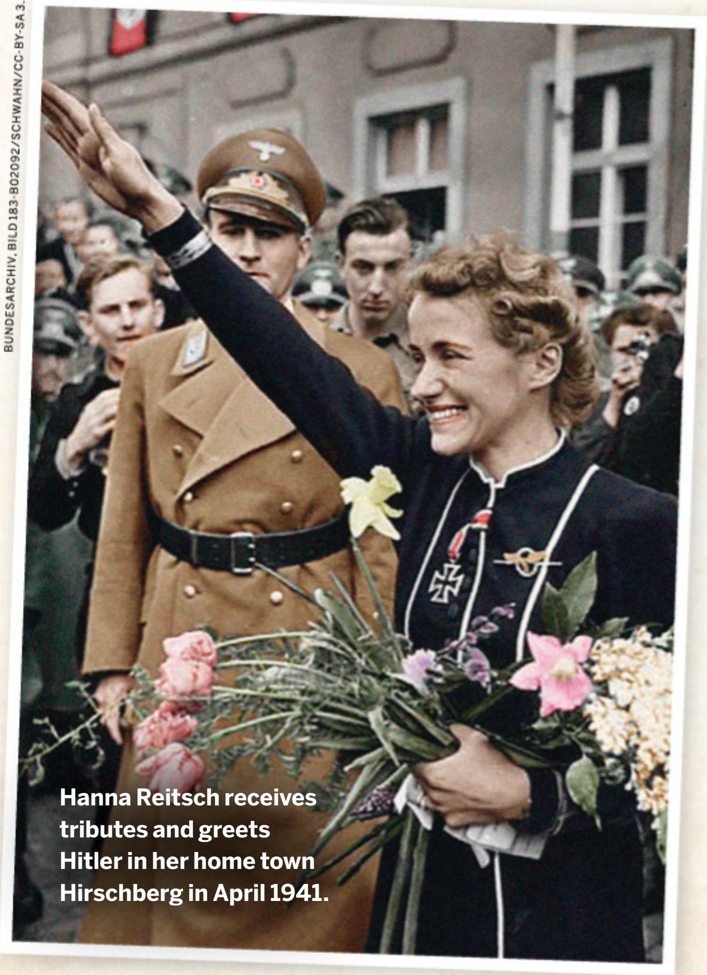
AS THE ONLY woman at the flight school, Reitsch caused a stir. "Everyone seemed to be expecting a highly entertaining time at my expense," she noted in her autobiography. At only 150 centimetres tall, she had to sit on a cushion in the cockpit to reach the controls. But her classmates soon gained respect for their female colleague - Reitsch had more flying experience than most and was also more skilful: "When she flew, it was like anyone else going for a walk – she had mastered the medium," her commanding officer said in awe.

In 1937, Germany was on the verge of developing the most modern air force in the world. Hanna Reitsch was promoted to *flugkapitan* (captain) and ordered to Rechlin, near Berlin, where the Luftwaffe had a test centre. Her first task was to test-dive the brakes on the Ju 87 Stuka dive bomber. She then flew the world's first fully airworthy helicopter, designed by engineer Henrich Focke.

When war broke out in 1939, she was, perhaps without realising it, already a PR icon for the Nazis. With her broad smile, technical expertise and flying experience, Reitsch took both the public and the elite by storm.

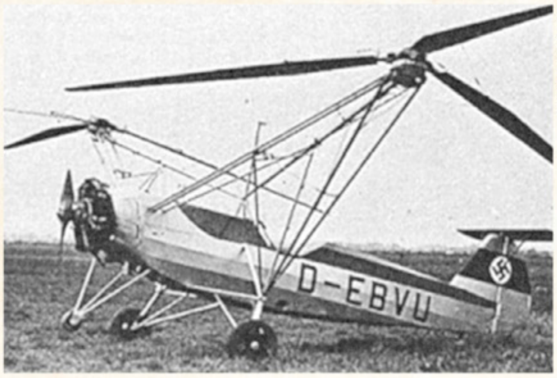
The pilot's unique personality meant that she was never criticised for betraying the housewife ideal of National Socialist ideology.

In the autumn of 1939, Hanna Reitsch helped to develop a glider, the DFS 230, which was used the following year to transport troops in the legendary



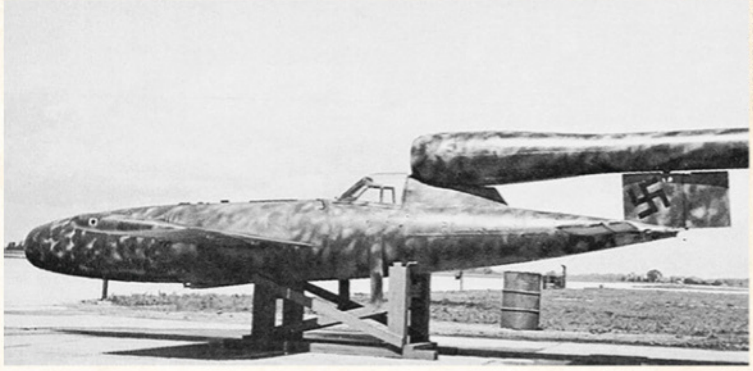
BUNDESARCHIV, BILD 183-B02092/SCHWAHN/CC-BY-SA3.0

Hanna Reitsch receives tributes and greets Hitler in her home town Hirschberg in April 1941.



HISTORIE ARCHIVE

Focke-Wulf Fw 61. Reitsch test-flew the world's first fully airworthy helicopter. The aircraft first flew in 1936.



HISTORIE ARCHIVE

The manned V-1 was a further development of the unmanned missile that terrified Londoners in the summer of 1944. Reitsch wanted to fly the suicide rocket, but the project was never finished.

attack on the Eben Emael fortress in Belgium. In 1940, she was given the deadly task of testing a cutting device to slice through barrage balloon cables in a Dornier 17. The blades were placed under the wings of the aircraft and cut through the balloons' anchorage to the ground to make it easier for German bombers to fly low over targets.

For her efforts, Hanna Reitsch received the Iron Cross, second class, directly from Adolf Hitler's hand. She received a second Iron Cross, this time first class, in 1942, after crashing a prototype of the Me 163B rocket plane. The aircraft dropped its landing gear after take-off and reached 10,000 metres in one and a half minutes. Then the pilot had to land the plane on an metal skid. After her crash, Reitsch spent five months in hospital with a fractured skull and cracked vertebrae. To encourage her, SS chief Heinrich Himmler sent her fruit juice and chocolate.

HANNA REITSCH NEVER joined the Nazi Party and claimed throughout her life that she did not know about the Holocaust. For her, politics was irrelevant – it was Germany she served, not the party. When testimonies of various atrocities reached her ears, she dismissed them as mere rumours. She sometimes called leaders to account, but was happy to accept their evasive and glossed-over explanations.

After her convalescence, Reitsch became involved in another spectacular project. It was a further development of the V-1 rocket, the jet-propelled missile (known to the British as the buzz bomb or doodlebug) that would strike fear into the hearts of Londoners in the summer of 1944. The idea was to put a pilot in the flying bomb to make it more accurate. The volunteer pilots had to sign a contract indicating that they understood that the mission meant death. Reitsch was very disappointed when the project was withdrawn at the last minute.

Hanna Reitsch was one of the last people to see Adolf Hitler alive. On 25th April 1945, she flew a reconnaissance plane – a Fieseler Storch – into Berlin with General Ritter von Greim. He had been ordered to the bunker under the Reich Chancellery to be appointed, it turned out, as the new head of the Luftwaffe. The fact that the general was only semi-conscious after being injured on the flight to Berlin didn't concern Hitler.

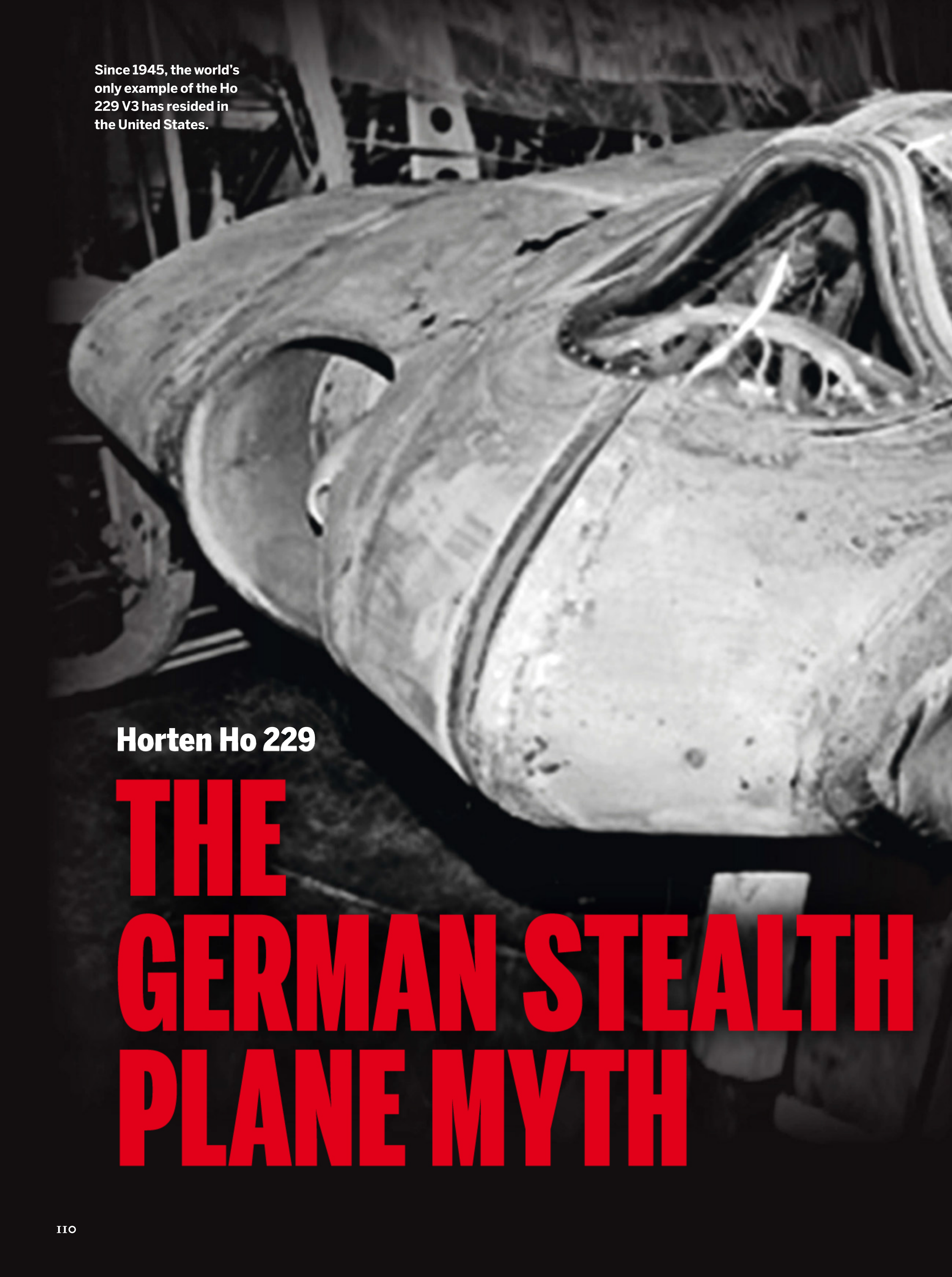
> **"FOR HER EFFORTS, HANNA REITSCH RECEIVED THE IRON CROSS DIRECTLY FROM ADOLF HITLER'S HAND"**

Soon Reitsch and von Greim received new orders from the deranged Führer: they were to find and arrest Himmler. This probably saved their lives. The duo were arrested by the Allies in Kitzbühel, where Reitsch received the shocking news that her entire family was dead. Her mother, sister and nephews had all been shot by her father, who had become terrified of not being able to protect them from the Red Army's rampaging soldiers.

DURING HER IMPRISONMENT, Reitsch was offered a job in the US, where she would work with one of her old classmates from the gliding school, rocket scientist Wernher von Braun. Reitsch declined, saying that her heart belonged to Germany. She continued to fly, compete and break records. In many parts of the world, she maintained her star status.

But in post-war Germany, Hanna Reitsch became a pariah. No one wanted to know about a Nazi heroine who refused to apologise and claimed that she had only done her patriotic duty. Hanna Reitsch died in Frankfurt in 1979 and is buried in the family grave in Salzburg.

Anna Larsdotter is the author of Swedish-language book *Kvinnor i Strid* (*Women in Combat*).



Since 1945, the world's only example of the Ho 229 V3 has resided in the United States.

Horten Ho 229

THE GERMAN STEALTH PLANE MYTH

NATIONAL AIR AND SPACE MUSEUM

In the final months of the war, two German brothers toiled to build a revolutionary new jet aircraft. Its unusual shape gave rise to the myth that the plane would not have been seen on Allied radar – a technological feat far ahead of its time.

Text: **NATASJA BROSTRÖM**

Soldiers from the US 3rd Army jumped down from the truck and approached the abandoned hangar, which stood in a forest in a remote part of central Germany. In the distance, shots could be heard from the advancing Allied troops and retreating German armies. Reliable intelligence had revealed the hangar was part of a weapons factory that stored one of Hitler's feared *Wunderwaffen* (wonder weapons) – groundbreaking new weapons aimed at turning the tide of war back in the Nazis' favour. But now, in mid-April 1945, Hitler's Third Reich was collapsing, and US troops desperately hoped to root out the advanced weapons before the Soviets arrived. The inventions contained new technology that must not – for the sake of the Western world – fall into the hands of the rapidly approaching Red Army, which was swarming through Germany from the east.

THE AMERICANS PUSHED the hangar door open, at which point light fell into the room to reveal a wondrous machine. On the floor lay a disassembled plane with such unusual shapes that at first the soldiers couldn't comprehend what they'd found. Although the wings hadn't been mounted, it was clear the aircraft was different in every possible way from ordinary fighters and bombers. Its shape seemed more reminiscent of a bat than a plane.

When the smooth grey-green plane with painted Swastikas was put together, it became a single large wing that ended in a slight tip. The plane had no propellers; instead, two jet engines of a brand new and ultra-advanced type were embedded in the fuselage on either side of the one-man cockpit.

There was no doubt – the Americans really had uncovered one of Hitler's Wunderwaffen. It became clear after they scanned the Allied list of suspected superweapons that the plane the US troops had discovered in this deserted hangar in the forest was the legendary 'invisible' Ho 229 jet fighter.

"US TROOPS HOPED TO ROOT OUT THE ADVANCED WEAPONS BEFORE THE SOVIETS"

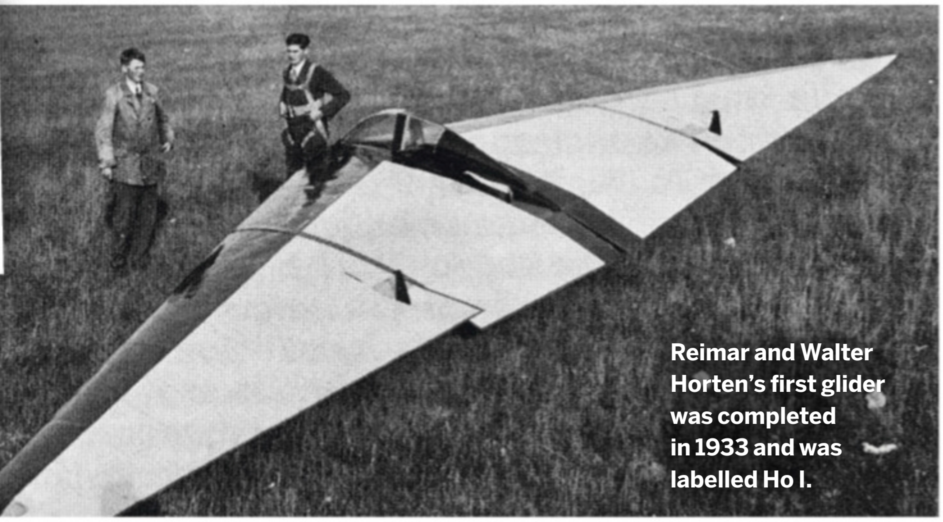
The men behind the unique machine were German brothers Reimar and Walter Horten. They had been obsessed with aircraft from childhood and had done all they could to absorb as much knowledge about planes as possible. The brothers' long experience constructing both model aircraft and gliders would prove pivotal during the development of the Ho 229 stealth fighter.

DURING THEIR ADOLESCENCE, the Horten brothers repeatedly entered Germany's national model aircraft championships with their own home-built models. The Treaty of Versailles had prohibited the construction of motorised and armoured aircraft in Germany, so gliders became popular during the interwar period.

From 1925, the Horten brothers began building models from wood and plywood. The technically gifted Reimar was particularly fascinated by a single-wing arrangement. This design – better known as a flying wing – has no tail section, and utilises what's known as a blended wing body. It required intricate mathematical calculations for everything from buoyancy to landing.

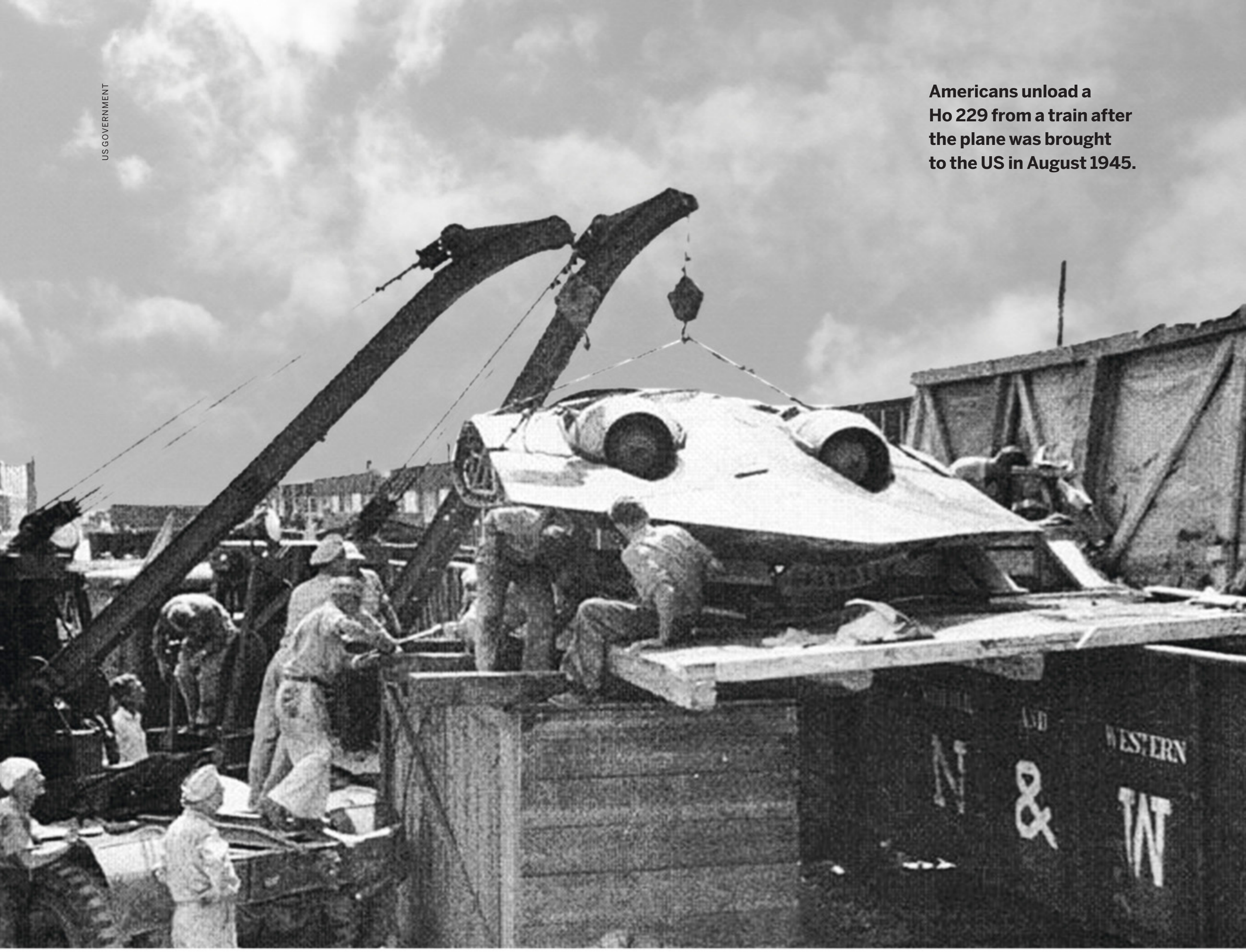
As the brothers gained more experience, their flying wings became better and more stable, and could soon fly further than the competition's conventional designs. The brothers won first place three years running from 1930-32 at the championships, which took place on Wasserkuppe

Despite no formal training in aeronautical engineering, brothers Reimar (1915-94) and Walter Horten (1913-98) still managed to develop some of the most advanced aeroplane prototypes of the 1940s.



Reimar and Walter Horten's first glider was completed in 1933 and was labelled Ho I.

HISTORIE ARCHIVE (3)



US GOVERNMENT

Americans unload a Ho 229 from a train after the plane was brought to the US in August 1945.

mountain near Frankfurt. Their success left them hungry for more, and in 1932, 17-year-old Reimar and 19-year-old Walter decided it was time to build a full-size flying wing with them as pilots.

THE PLANE, HO I, was completed in 1933 and in the summer of 1934, the brothers proudly unveiled it at the glider championships, where they collected 600 Reichsmarks for the most innovative design. But problems getting the plane home forced them to burn all but the most valuable metal parts. Reimar announced he would build a new model as soon as possible – this time with a motor, and received permission from Hitler, despite it contravening the Treaty of Versailles.

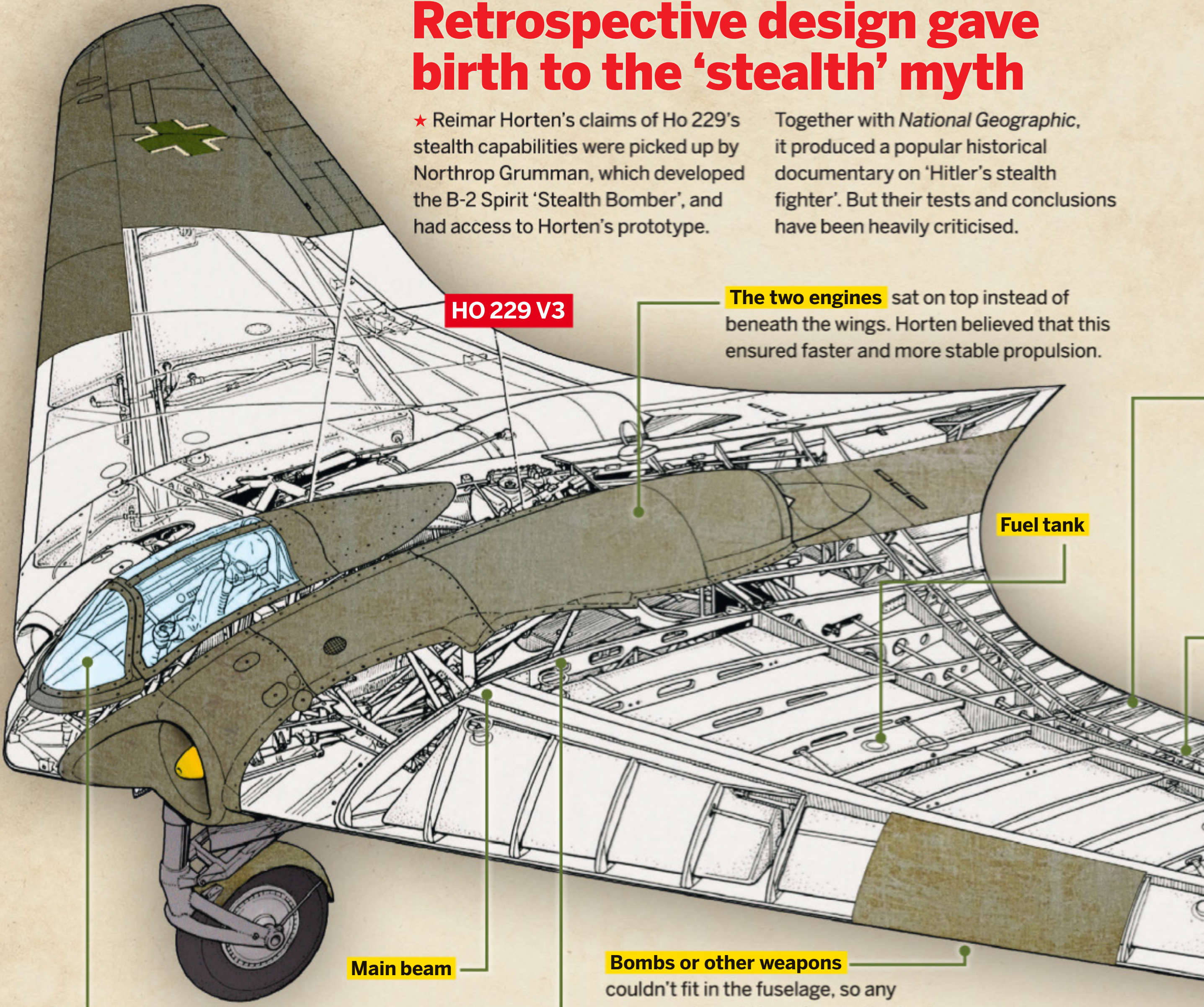
As with Ho I, Ho II was built at the Reimar family home in Bonn. People passing the house on the Venusbergweg must have wondered what was going on when, for example, a wing stuck out of one of the windows. When the plane was to leave the building, the double doors to the living room had to be removed while the wings scraped across the parquet floor. Despite the wear and tear on their home, Max and Elizabeth Horten fully supported their sons' project.

By the time Ho II had been completed in May 1935, it was too late for the brothers to sign up for that year's championships. At the same time, both men were conscripted to the Nazi regime's mandatory two years of military service. While Walter became a fighter pilot, Reimar performed his military service as a Luftwaffe flight instructor in Cologne. But what initially looked like being a setback for their development work soon proved a huge opportunity instead. The base received a new commander, Major Oskar Dinort, who was passionate about gliders and had set the world record for the longest flight at 14 hours and 43 minutes. As soon as Dinort saw Reimar's aerodynamic Ho II, he wanted one, and several other officers also placed orders. Soon Reimar was given his own workshop at the airfield, where he also developed new motorised models.

THE SMALL PLANES were built from wood and light metals, which meant they consumed less fuel, so could fly for longer than conventional planes. The ►

Retrospective design gave birth to the 'stealth' myth

★ Reimar Horten's claims of Ho 229's stealth capabilities were picked up by Northrop Grumman, which developed the B-2 Spirit 'Stealth Bomber', and had access to Horten's prototype. Together with *National Geographic*, it produced a popular historical documentary on 'Hitler's stealth fighter'. But their tests and conclusions have been heavily criticised.



The two engines sat on top instead of beneath the wings. Horten believed that this ensured faster and more stable propulsion.

Bombs or other weapons couldn't fit in the fuselage, so any armament would have been attached to the outside. No amount of reflective paint would have hidden external weapons from radar.

▸ Horten brothers' work started to receive serious attention from experts, and in 1938, Reimar and Walter received the Lilienthal Prize for Innovative Design, along with 5,000 Reichsmarks. The money made it possible for them to finance one year's aviation studies at the Technical University of Berlin.

IN 1939, THE Nazis invaded Poland. World War II was underway, and both brothers were called up to the Luftwaffe. But Walter was shrewd and quickly found a loophole in the German military machine to allow them to continue uninterrupted development as part of a top-secret project called Sonderkommando Luftwaffe-Inspektion 3 (LIn.3). Walter used all his charm to persuade a secretary – whom he later married – in the German aviation ministry to forge her boss's signature so Reimar could be transferred to the working group.

Sonderkommando LIn.3 was in fact a complete fabrication; in reality, it provided a workshop where the brothers could build their fixed wings in peace, undisturbed by the war. The brothers' scams became increasingly ambitious over time, ordering materials using several forged signatures. If their fake project had been discovered, both would have faced harsh prison sentences, but for Walter, Reimar's work was more important. And Reimar agreed – given they were already at risk of arrest, what were a few more fake telegrams?

During the Battle of Britain in August and September 1940, radar proved crucial to the outcome – at least in the eyes of posterity. It was in

The world's first turbojet engine – the Junkers Jumo 004B – delivered a top speed of almost 1,000 km/h.

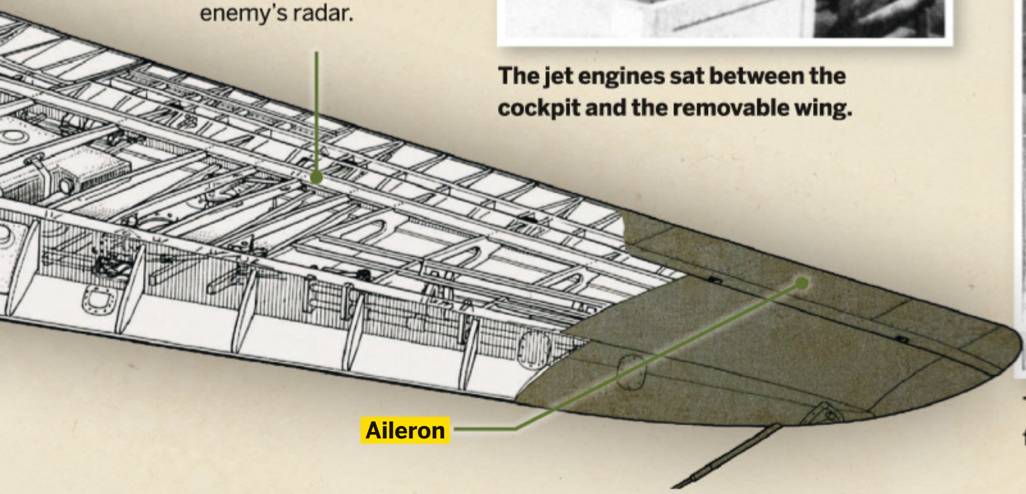
3D illustration of the jet.

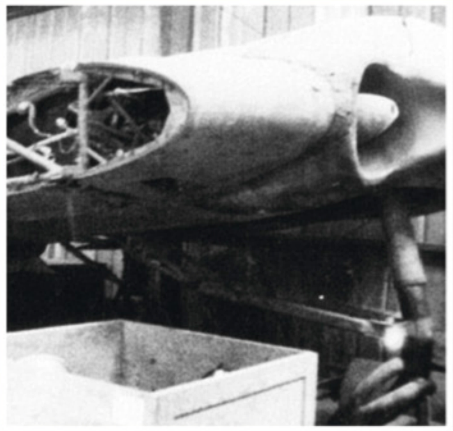
HISTORIE ARCHIVE

Designers	Walter and Reimar Horten
Developed	1943–45
Number produced	1
Pilots	1
Length	7.5 m
Height	2.8 m
Wingspan	16.8 m
Maximum take-off weight	8 tonnes
Top speed	977 km/h
Maximum altitude	12,000 m
Range	1,000 km
Engine	2x Junkers Jumo 004B turbojets
Bomb load	2x 500-kg bombs
Rockets	24x R4M air-to-air rockets
Armaments	4x MK108 autocannons

The fuselage consisted of a wooden hull with steel tubing. The removable wings comprised two thin sheets of plywood glued together.

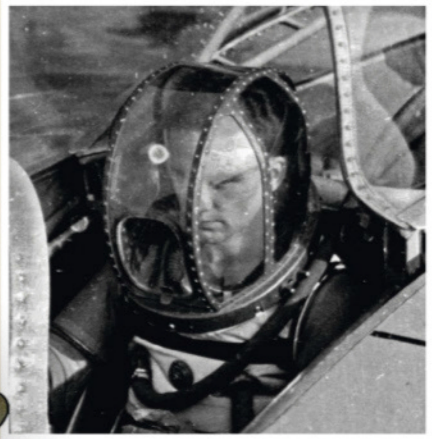
The wings sloped backwards at a 32-degree angle, which later proved to deflect radar waves to the side instead of back to the enemy's radar.





HISTORIE ARCHIVE

The jet engines sat between the cockpit and the removable wing.



HISTORIE ARCHIVE

The pilot wore a pressurised helmet for flying at high altitudes.

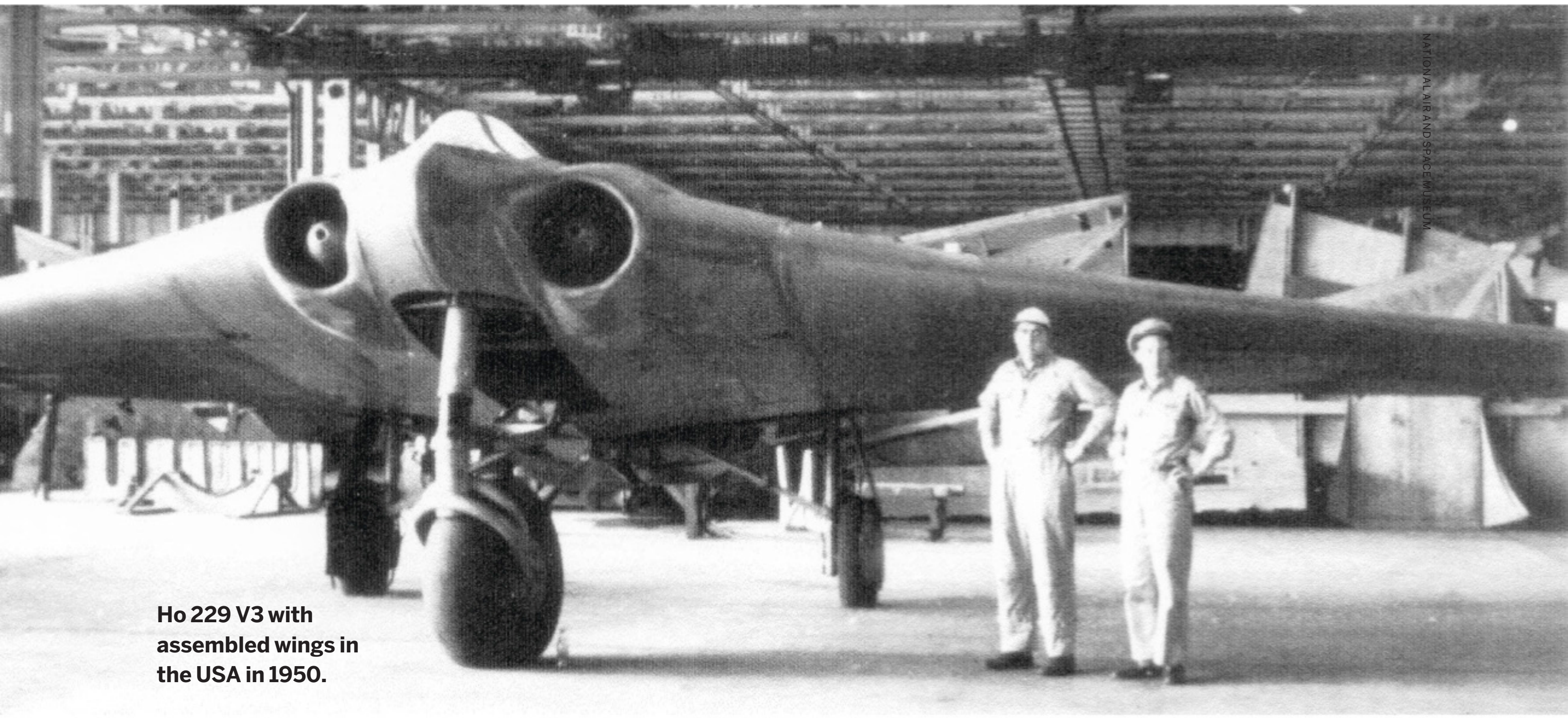
connection with this that Reimar began to consider the possibility of using his aircraft's unusual shape to avoid radar waves. At least, that's what he claimed in his 1983 memoirs, although this wasn't documented in other sources.

THANKS TO A stroke of luck, Walter had been transferred from active fighter pilot to technical advisor in the newly created *Jagdfluginspektion* (Fighter Inspection Command). Here he became acquainted with a new advanced technology: jet engines. The engines, which had been developed by BMW and Junkers, would be part of a new generation of German fighters. Walter realised that propellers would soon be obsolete when he saw the sketches of the Messerschmitt Me 262 turbo jet fighter and later attended the first test flight of the tailless rocket-powered Lippisch DFS 194 aircraft.

> **"THE BROTHERS' SCAMS BECAME INCREASINGLY AMBITIOUS OVER TIME"**

Walter used several fake signatures to order jet engines and form a working group of 170 men within the fictional Sonderkommando LIn.3. To make the project look official, his brother always appeared in Luftwaffe uniform.

In mid-1943, as Reimar was working on the brothers' most advanced project yet, a single-wing ►


NATIONAL AIR AND SPACE MUSEUM

Ho 229 V3 with assembled wings in the USA in 1950.

turbo jet, Hermann Göring issued a call to the Nazi airline industry. The Luftwaffe commander-in-chief demanded that a fighter plane be developed that could be loaded with 1,000-kg bombs and fly 1,000 kilometres with a top speed of 1,000 km/h. The Horten brothers didn't hesitate and immediately submitted their jet project entitled Ho 229.

After a few weeks, the call came to meet at Göring's country house, Carinhall, north-east of Berlin. As Reimar presented his sketches, Göring's eye widened – particularly when he realised that Reimar's flying-wing was the only one of those proposals submitted that came close to fulfilling his brief.

At the end of the meeting, Göring got up excitedly: "Do it. Make it and let me see it."

“THE SUPER-PLANE WAS EXPECTED TO ROLL OUT WITHIN SIX MONTHS”

WITH GÖRING›S SUPPORT, the Ho 229 went from being a backyard project to a high-profile superweapon designed to save the Third Reich. The Ho 229 was to be built at the Gothaer Waggonfabrik aircraft factory, but with Germany struggling on all fronts, the aircraft had to be manufactured using available and cheap materials, such as wood.

This, Reimar later stated, was to give the Ho 229 stealth properties – as wood is almost invisible to radar. But the engines and other parts were made of metal, which would have reflected radar waves even when enclosed in a wooden hull – unless the hull had been covered in radar-absorbing paint. Reimar also claimed he'd developed such a paint, using coal dust to absorb radar waves. According to Karl Nickel, one of the brothers' associates from this period, however, coal dust was chosen as an ingredient only because it was cheap and available in large quantities at the time. Moreover, there's no compelling evidence that coal dust has radar-absorbing properties.

Whatever Reimar Horten's claims, there's no doubt he worked day and night, even as US forces crossed the Rhine in the spring of 1945 and British planes bombed German cities.

His calculations and test flights allowed Reimar to discover that the jet engines should sit on the top of the wing for maximum effect. He also had to adapt the cranks, brakes and flaps to the powerful engines, otherwise the flying-wing risked the dreaded 'Dutch roll', whereby the plane would rock uncontrollably from side to side. Although the Ho 229 was expected to roll out within six months, problems with the engines, which were 12 centimetres too long, meant the project fell behind schedule. It wasn't until 18th December 1944 that the world's first jet-powered single-wing fighter took to the skies. A proud Reimar Horten watched his unique plane from the ground.

News of the Ho 229's success reached high up in Nazi circles and triggered a new meeting with Göring. They met several times and the Luftwaffe chief became increasingly spellbound by the brothers' work as their relationship became more familiar. "It was like a speech from a father to a son," Reimar said of Göring's comments later.

During one of the meetings, Göring asked what Reimar wanted to do after the war: "I told him I will go to Freiburg [to] develop planes there," the younger Horten recalled. "Göring answered: 'I will need one hangar for Lufthansa.' He meant that he agreed that he would give me all the hangars there except one to make sailplanes and carry out design work."

The Horten brothers' lifelong project was close to success when disaster struck. In February 1945, during the test flight of the second version of the flying-wing plane, one engine cut out. The pilot extended the landing gear, disrupting the plane's balance. To the horror of those watching, the plane went into a series of spins before smashing into the ground, while the pilot was thrown from the cockpit into some fruit trees. When help arrived, he was found dead among the branches.

The crash forced the Horten brothers to build a new prototype from scratch. But although Reimar and Walter burned for the cause, they recognised in March 1945 that Germany was close to defeat. Their new, improved prototype – Ho 229 V3 – would never be completed, even though the factory was working at full stretch.

ON 14TH APRIL 1945, it was finally all over. US soldiers stormed the secret hangar and, shortly after, Reimar and Walter Horten were sent with other German engineers and scientists to Britain for interrogation. But initial excitement faded quickly. The experts leading the brothers' interrogation simply couldn't comprehend the flying-wing design. The incomplete aircraft was, however, shipped to the US, where it would be assembled and closely examined.

After their release, Reimar and Walter briefly worked for the British. The idea was to build flying-wing planes that could be used for passenger flights on intercontinental routes, but the project was quickly shelved in 1946. Walter then returned to Germany until his death in 1998, while Reimar emigrated to Argentina in 1949, where the country's dictator, Juan Perón, offered well-paid work to German engineers and weapons experts.

The Hortens' flying-wings were decades ahead of their time. The US only truly realised the potential of stealth technology with the B-2 Spirit bomber in 1988, which boasted many similarities to the Ho 229 V3. After a lifetime in obscurity, Reimar Horten finally gained full recognition for his work in 1993, when the Royal Aeronautical Society awarded him a Gold Medal for his outstanding efforts. ■

Natasja Broström is a military history writer.

Today's stealth aircraft are resistant to radar

★ Unlike the Horten brothers' alleged Wunderwaffen, modern stealth aircraft are actually equipped with a special coating and shape that prevents radar waves from detecting the aircraft. Today, countries including Russia, China and the US use the technology.

HISTORIE ARCHIVE

HISTORIE ARCHIVE

SUKHOI SU-57

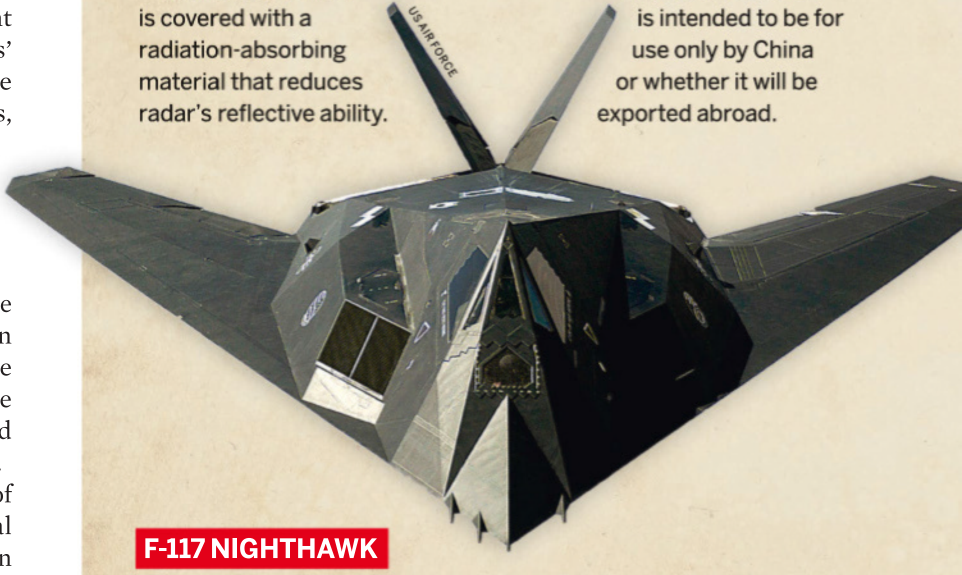
The Sukhoi Su-57 (formerly PAK FA or T-50 prototype) is Russia's first stealth aircraft. The prototype made its first flight in 2010 and the Su-57 went into production in 2020. Its stealth characteristics are mainly based on the aircraft's shape and angles. In addition, the antennas are recessed, while the weapons are hidden in the fuselage so that radar cannot detect them.

Finally, the Sukhoi is covered with a radiation-absorbing material that reduces radar's reflective ability.

SHENYANG J-31

China is currently developing the Shenyang J-31 stealth fighter plane. The plane is said to be able to deflect several types of radar beams, but aviation experts outside of China are unsure what makes the plane stealthy, speculating it's a surface coating. The plane can reach a top speed of 2,200 km/h and weighs 17,600 kg.

Conflicting reports from China make it unclear at this stage whether the fighter is intended to be for use only by China or whether it will be exported abroad.



US AIR FORCE

F-117 NIGHTHAWK

A total of 64 US F-117 Nighthawks have been used in several wars, including Iraq in 1991 and 2003, Afghanistan in 2001, and Serbia in 1999. The Serbs managed to shoot down a Nighthawk with anti-aircraft missiles when radar detected the plane's open bomb bay doors. The pilot ejected and was rescued after six hours.

In 2008, the Nighthawk was retired after 25 years of service in the US Air Force.

HISTORIE ARCHIVE

Hitler deployed 2,600 aircraft on the Eastern Front in January 1945. The Focke-Wulf Fw 190 was the most successful aircraft in these battles.

Luftwaffe's Last Hurrah

In January and February 1945, the German air force managed to block the Red Army in front of Berlin. The desperate gamble prolonged World War II by several weeks.

Text: **CHRISTER BERGSTRÖM**

The swarm of German fighter planes emerged from the clouds and crashed into the Soviet column of vehicles. Drivers threw themselves in horror from still-moving lorries, and the next moment the air echoed with the crackle of the German planes' machine guns and autocannons. Tankers caught fire, and as vehicles and trailers capsized and plummeted into the snowy ditches, the roar of engines could be heard as the German pilots brought their machines out of the dive. Then the bombs exploded.

For the Soviet soldiers lying on the ground, it felt like the end of the world. The shock waves burst their eardrums, the ground shuddered and dirt rained down on them.

It was the same all along the front. "You can't imagine the enormous losses we inflict on the Russians during our air raids," wrote a young and enthusiastic German pilot in a letter home.

A Soviet account read: "The roar of tank and aircraft engines, the rumble of exploding shells and bombs, the dry hammering of automatic cannons – none of this stopped for a moment. It was hard to understand how the earth, let alone human beings, could withstand such an avalanche of fire and steel."

It sounded like a description of the first winter of the war on the Eastern Front, but in fact these scenes took place just 60 kilometres east of Berlin in early February 1945 – three months before the end of World War II. This would prove to be the Luftwaffe's last major success of the war.

BUNDESARCHIV BILD 102-13805

The head of the Luftwaffe, Herman Göring.

THE YEAR HAD started badly for the Western Allies. On the first day of 1945, the Luftwaffe had caught them with their pants down with Operation *Bodenplatte* (Baseplate), knocking out 500-600 British and US aircraft at bases in Belgium and France. Meanwhile, brand-new German armies

SOVFOTO/UIG/GETTY

Soviet T-34 tanks roll into Posen (now Poznan, Poland) after heavy fighting in winter 1945.

stormed US positions in Alsace in a surprise German offensive: Operation *Nordwind* (North Wind). It was only two weeks after the German attack in the Ardennes, where they had torn apart the US army and cut a wedge 100 kilometres deep in the Allied front.

On 6th January, British Prime Minister Winston Churchill appealed to Soviet dictator Stalin for an earlier launch of the planned major Soviet offensive.

AFTER THE RED Army's great successes in the summer of 1944, which had brought the Soviets to Warsaw, it spent the autumn and early winter building up its supplies for the major offensive intended to finish off the Third Reich. The attack was scheduled to begin around 20th January 1945, but when Joseph Stalin received Churchill's telegram on 6th January 1945, he was only too happy to oblige. Disagreements between the three major Allies had begun to emerge over the issue of Poland, and Stalin realised that the German Ardennes offensive had provided him with an excellent opportunity to strengthen his policy positions.

On 8th January, Marshal Ivan Konev, commander of the Soviet 1st Ukrainian Front, received a brief phone call ordering him to take the final steps to launch the attack more or less immediately. On 12th January 1945, the 'God of War' – as Stalin dubbed his powerful artillery – roared at the front in Poland. Tens of thousands of Soviet artillery pieces tore apart the German positions, and out of the fog rolled huge Stalin IS-2 tanks, each armed with a 122-mm gun.

THE GERMAN FRONT lines on the Eastern Front collapsed like a house of cards. Soviet armoured forces rolled into the gaps where entire German divisions were fleeing in panic, crushing anything in their path. Hitler realised that everything depended ►

> **"YOU CAN'T IMAGINE THE ENORMOUS LOSSES WE INFLICT ON THE RUSSIANS DURING OUR AIR RAIDS"**
>
> ***German airman in a letter home***

BUNDESARCHIV BILD146-1976-072-09

Roads in eastern Germany were filled with refugees trying to flee the Soviet offensive. East Prussia (now Poland) in 1945.

on his aircraft – as it often did on the Eastern Front. Ever since the winter of 1941-42, the Luftwaffe had acted as a fire brigade in the east, and it was also where most German aircraft had been based for the largest part of the war. But in January 1945, most of the Luftwaffe had been deployed in the west to support the Battle of the Bulge.

Virtually all aircraft were ordered to redeploy to the Eastern Front, where the Luftwaffe's strength increased to 2,600 aircraft. This meant that the German and Soviet fighters would battle on virtually equal terms on the main front.

But Soviet aviation was very different from what it had been in 1941. German pilots arriving from the Western Front had to hastily revise their old habits. One of them, Josef Unverzagt, said after the war: "The Russians did not have the same numerical superiority as we encountered in the West, but their fighter pilots were often significantly better."

THE ROLES WERE now reversed compared to the summer of 1941. Time after time, small formations of Soviet fighters swooped down on German fighter-bombers, forcing them to drop their bombs and engaging them in fierce air combat. On 27th January, the Germans shot down just eight Soviet planes for the loss of at least 30 aircraft.

The Soviet armies continued inexorably westwards. They had soon penetrated Germany, encircling Königsberg and approaching Berlin.

The whole situation transformed with a sudden change in the weather. A storm front moved in on 28th January, bringing torrential rain and rapidly rising temperatures. The roads where Soviet supplies were to be delivered had already been crushed by hundreds of heavy tanks travelling westwards. The melting snow and heavy rainfall now made these roads very difficult to negotiate. But the worst thing for the Soviets was that the Luftwaffe could continue operations almost undisturbed. Soviet aircraft had

The Focke-Wulf Fw 190 F-8, the attack model, was used with great success on the Eastern Front. It had thicker armour and was sometimes equipped with rockets.

ERHARD JÄHNERT VIA CHRISTER BERGSTRÖM

moved up to improvised front-line airbases, which were often nothing more than simple grass fields, and these were now reduced to boggy ground from which take-off was virtually impossible. Meanwhile, the Luftwaffe operated from well-equipped pre-war airfields with concrete runways. At the end of January 1945 – at the very end of the war – the incredible event of German air supremacy on the Eastern Front occurred.

"It was like 1941, we were masters of the air, and it was a great feeling," said one pilot.

GERMAN HIGH COMMAND ordered a virtual cessation of all air operations against the Western Allies so that all resources could be channelled to the east. This brought the Luftwaffe to no fewer than 3,300 individual combat missions against the Soviets from 31st January to 2nd February, and combat activity continued to increase. Against the Soviet 5th Shock Army alone – which was heading straight for Berlin – over 5,000 air operations were carried out on 2nd and 3rd February.

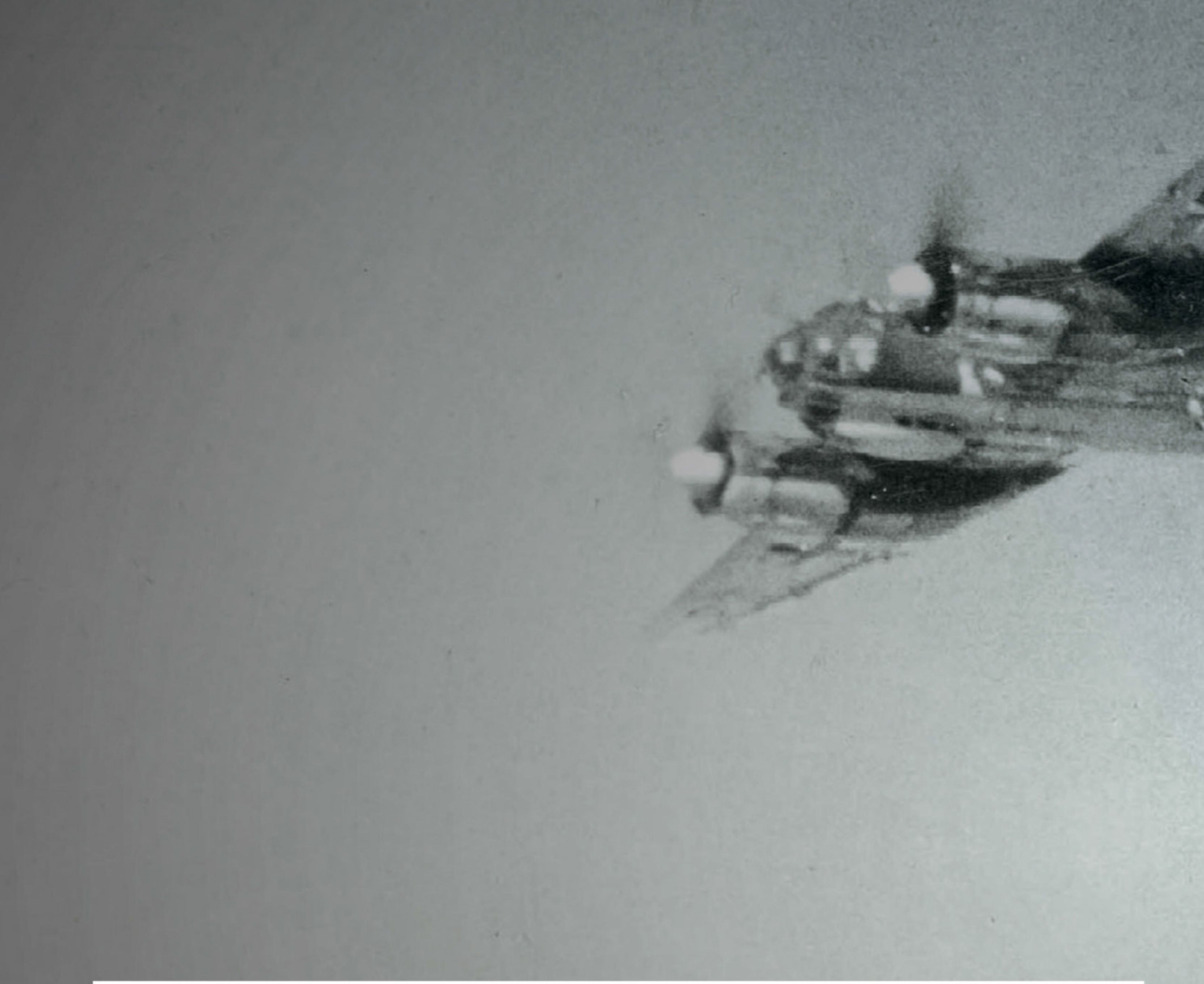
On the Soviet side, the situation became desperate. The frozen surface of the River Oder was broken by the melting of ice accelerated by a hailstorm of German bombs dropped precisely to break it. The riverbanks were turned into graveyards for thousands of Soviet armoured vehicles, helpless victims of incessant German air strikes. On the flooded front-line airfields, Soviet airmen clenched their fists in frustration.

"HITLER REALISED THAT EVERYTHING DEPENDED ON HIS AIRCRAFT – AS IT OFTEN DID ON THE EASTERN FRONT"

The Soviet 16th Air Army had more than 2,000 aircraft at its disposal but managed to get only 624 into the air in the first ten days of February. In the same period, the Luftwaffe carried out almost 14,000 missions in the 16th Air Army's area of operations. Certainly, the Soviets were hit hard by problems with maintenance, and of course they were now advancing into an area fortified by the Germans, but the decisive factor in their failure to continue their advance across the Oder River east of Berlin in February 1945 was the Luftwaffe's effort. This undoubtedly prolonged the war by several weeks.

By April 1945, when the Red Army launched the final assault on Berlin, the Soviets had built permanent runways for their air forces, enabling them to intervene at full force. Then, as we know, the outcome was completely different...

Christer Bergström is a military history writer.



LUFTWAFFE

Publishing director: Morten Kaiser
Editor-in-chief: Ann Qvist
Production: Eva L Strandmose
Cover: Sidse Lange
Translators: Nick Peers, Katharine Davies, Toni Baxter

Bringing History to Life is published by:
Bonnier Publications International AS,
PB 543, 1411 Kolbotn, Norway.
ISSN: 2445-6659
Printed by: Poligrafijas Grupa Mukusala, Latvia

Marketing/Distribution UK and Export:
Marketforce (UK), 3rd Floor, 161 Marsh Wall,
Canary Wharf, London E14 9AP
Tel: +44 (0) 20 3787 9001
www.marketforce.co.uk

Licensing and Syndication:
Regina Erak – regina.erak@globalworks.co.uk
Tel: +44 (0)7753 811622

All rights reserved. Reproduction in any manner or form is strictly prohibited without the prior written consent of the publisher. Whilst every care is taken with the material submitted to this bookazine, no responsibility can be accepted for loss or damage. Whilst every effort has been made to contact all copyright holders, the sources of some pictures that may be used are varied and, in many cases, obscure.

The publisher is happy to make good in future editions any error or omissions brought to their attention. The publication of any quotes or illustrations for which authorisation has not been given is unintentional.

NORDIC SWAN ECOLABEL
Printed matter
3041 0876

BONNIER
Publications International

Cover credits: Piotr Forkasiewicz, Royal Air Force, Historiearkiv, Australian War Memorial

SCHERL/SUEDDEUTSCHE ZEITUNG PHOTO/RITZAU SCANPIX

STUKA
Sirens were psychological weapon
Air supremacy in Europe 1942
Old planes given new roles
Focke-Wulf Fw 190
GERMANY'S BATTERING RAM

The rise and fall of the Luftwaffe

In 1935, the Luftwaffe was officially founded after Hitler broke all military limitation clauses in the Treaty of Versailles. Neither the British, French nor Americans resisted, and the rearmament of Germany could begin in full public view. Everything that could fly now belonged to Hermann Göring. Here you can read about the creation of Nazi Germany's feared air force, which spread death and destruction throughout World War II – right up to the final battle. You can also take a closer look at iconic aircraft models such as the Junkers Ju 87 Stuka and the heavily armoured Focke-Wulf Fw 190.

History
BONNIER
Publications International